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ABSTRACT

This is the 12th annual listing of research on mathematics education. The research noted is alphabetically organized by author(s) within the following three categories: (1) research summaries; (2) journal-published reports; and (3) dissertation abstracts. Grade or age level is indicated for each reference. Included in the listing are studies in which mathematics education was not the sole or primary focus of research. While most of these peripheral studies are not annotated, those specific to mathematics are. Most annotations indicate one principle finding of the study. A list of the journals searched is provided, and the number of references from each cited journal is noted. An index of general topics is appended to help readers locate studies of particular interest. (MP)

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JOURNAL FOR RESEARCH IN MATHEMATICS EDUCATION

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Research on Mathematics Education Reported in 1981

Marilyn N. Suydam

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VOL. 13, NO. 4 JULY 1982

THE NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS

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A Journal of the National Council of Teachers of Mathematics

The *Journal for Research in Mathematics Education* is devoted to the interests of teachers of mathematics and mathematics education at all levels—elementary school through college.

Each manuscript submitted to the Editor of the *JRME* should be prepared in accordance with the guidelines detailed in the *Publication Manual of the American Psychological Association*, 2d ed. (1974), insofar as those guidelines are applicable to a particular paper. This manual may be purchased from Publication Sales, American Psychological Association, 1200 Seventeenth Street, NW, Washington, D.C. 20036. Use as a model the same paper included on pages 91–95 of the *Publication Manual*. Give particular attention to the content and format illustrated on page 91 for the cover sheet, abstract, and first sheet of actual manuscript text. Also note the use of a running head on subsequent manuscript pages.

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Also see the revised information for contributors in the January 1979 issue (Vol. 10, No. 1) pp. 3–6.

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RESEARCH ON MATHEMATICS EDUCATION REPORTED IN 1981

MARILYN N. SUYDAM
The Ohio State University

This is the 12th annual listing of research on mathematics education to appear in *JRME*. It is organized alphabetically by author(s) within three categories (research summaries, journal-published reports, and dissertation abstracts). Grade or age is indicated for each reference, and an index of general topics is included to help readers locate studies of particular interest.

Included in the listing are studies in which mathematics education was not the sole or primary focus of the research. Most of these peripheral studies are not annotated, but brief annotations are given for studies specific to mathematics education. Most annotations indicate one principal finding of the study, although most studies have additional findings. Readers are urged to check the original report for other results as well as for information to aid them in assessing the validity of the findings.

Despite the fact that approximately 40 journals are searched page by page and indexes (such as *Current Index to Journals in Education*) are used to locate articles in journals in which mathematics research reports appear irregularly or in less-accessible journals, some references are, unfortunately, not located until after the listing for a given year is in print. Because of time and space constraints, no attempt has been made to provide a continuous updating within the annual listing. At intervals, however, the ERIC Clearinghouse for Science, Mathematics and Environmental Education publishes a compilation of research references containing those listed in *JRME* plus additional references (including ERIC documents).

The bibliographical entries in this listing do not conform to *JRME* style requirements. Permission was granted to the author to follow the procedures and format previously established. — *The Editor*

DAI is used to refer to *Dissertation Abstracts International*. Order numbers are included; orders should be sent to University Microfilms International, P.O. Box 1764, Ann Arbor, MI 48106.

Funds for the preparation of this listing were provided in part by the ERIC Clearinghouse for Science, Mathematics and Environmental Education pursuant to contract no. 400-78-0004 with the National Institute of Education (NIE), U.S. Department of Education. Opinions expressed in this report do not necessarily reflect the positions or policies of NIE or the U.S. Department of Education.

The listing is an attempt to aid readers; it is printed as soon as possible after the year to which it applies. It is hoped that it helps to keep a variety of readers informed about the scope of research in mathematics education.

ICME 5
24–30 August 1984
Adelaide, Australia

The ICME 5 Organizing Committee is pleased to announce that the Fifth International Congress on Mathematical Education will be held in Adelaide on 24–30 August 1984.

The ICME invites you to participate in this Congress. The Formal Program, informal meetings, and social events will offer many opportunities to develop personal contacts for the dissemination of information and ideas relevant to current problems and interests of mathematical education.

The Second Announcement will be available in the fall of 1983.

The firm of Travel Planners, Inc., located in San Antonio, Texas, has been appointed the Official North American Coordinator for U.S. and Canadian delegates attending the ICME 5.

In North America only, the Second Announcement will be mailed to all who write to the address below or call (512) 341-8131.

ICME 5 TRAVEL PLANNERS
P.O. Box 32366
San Antonio, TX 78216

Research Summaries

One listing of research reports and 12 articles summarizing or discussing research findings were located.

Badger, M. E. Why Aren't Girls Better at Maths? A Review of Research. Educational Research 24: 11-23; November 1981. [--]

Burns, Patricia Knight and Bozeman, William C. Computer-Assisted Instruction and Mathematics Achievement: Is There a Relationship? Educational Technology 21: 32-39; October 1981.

Meta-analysis of findings from 40 studies indicated that CAI enhanced mathematical learning. (grades 1-12)

Clyde, Paul. The Mathematics Teacher Shortage--Some Solutions. Mathematics Teacher 74: 173-178; March 1981. [secondary teachers]

Glasman, Naftaly S. and Biniaminov, Israel. Input-Output Analyses of Schools. Review of Educational Research 51: 509-539; Winter 1981. [elementary, secondary]

Greer, Brian. Cognitive Psychology and Mathematical Thinking. For the Learning of Mathematics 1: 19-26; March 1981. [--]

Hart, K. Hierarchies in Mathematics Education. Educational Studies in Mathematics 12: 205-218; May 1981. [--]

Head, John. Personality and the Learning of Mathematics. Educational Studies in Mathematics 12: 339-350; August 1981. [--]

Hollis, Loye Y. "Mickey". Mathematical Concepts for Very Young Children. Arithmetic Teacher 29: 24-27; October 1981. [primary (age 5)]

Horak, Virginia M. A Meta-Analysis of Research Findings on Individualized Instruction in Mathematics. Journal of Educational Research 74: 249-253; March/April 1981.

Individualized approaches were found to offer positive results in many instances. (grades K-12)

Kieran, Carolyn. Concepts Associated with the Equality Symbol. Educational Studies in Mathematics 12: 317-326; August 1981. [preschool-college]

Lochhead, Jack. Research Synthesis on Problem Solving. Educational Leadership 39: 68-70; October 1981.

Some findings on both general and mathematical problem solving are reviewed. (--)

Lucains, Edith H. Women and Mathematics: Fact and Fiction. American Mathematical Monthly 88: 413-419; June/July 1981. [--]

Suydam, Marilyn N. and Weaver, J. F. Research on Mathematics Education Reported in 1980. Journal for Research in Mathematics Education 12: 243-319; July 1981.

This eleventh annual annotated listing includes 11 research summaries, 184 journal-published reports, and 359 dissertations for kindergarten through post-secondary levels. An index is included. (grades K-12, college)

Journal-Published Reports

This section contains 206 articles. The list of journals searched and the number of articles from each source may be found at the end of the total listing.

Adcock, Al; Leitzel, Joan R.; and Waits, Bert K. University Mathematics Placement Testing for High School Juniors. American Mathematical Monthly 88: 55-59; January 1981.

The early testing program had a positive effect on student enrollment and achievement. (grades 11, 12, college)

Aitkin, M.; Bennett, S. N.; and Hesketh, Jane. Teaching Styles and Pupil Progress: A Re-Analysis. British Journal of Educational Psychology 51: 170-186; June 1981.

"Convincing" evidence was found of three overlapping latent classes. For mathematics, the "formal" and "informal" teaching styles were close in effecting achievement. (elementary teachers)

Algozzine, Bob and Stoller, Laura. Effects of Labels and Competence on Teachers' Attributions for a Student. Journal of Experimental Education 49: 132-136; Spring 1981. [teachers in grade 4]

Algozzine, Bob and Ysseldyke, James E. An Analysis of Difference Score Reliabilities on Three Measures with a Sample of Low-Achieving Youngsters. Psychology in the Schools 18: 133-138; April 1981. [grade 4]

Alvidres, Maria D. and Whitworth, Randolph H. The Development and Validation of an Entrance Examination in a Mexican University. Educational and Psychological Measurement 41: 503-509; Summer 1981. [college]

Anick, Constance Martin; Carpenter, Thomas P.; and Smith, Carol. Minorities and Mathematics: Results from the National Assessment of Educational Progress. Mathematics Teacher 74: 560-566; October 1981.

Black and Hispanic students consistently scored lower than other students, although there was some improvement from the first assessment to the second. (ages 9, 13, 17)

Arlin, Patricia Kennedy. Piagetian Tasks as Predictors of Reading and

Math Readiness in Grades K-1. Journal of Educational Psychology 73: 712-721; October 1981.

Correlations of Piagetian tasks and mathematics scores ranged from .18 to .49. (grades K, 1)

Armstrong, Jane M. Achievement and Participation of Women in Mathematics: Results of Two National Surveys. Journal for Research in Mathematics Education 12: 356-372; November 1981.

Sex differences in participation favoring males existed for some higher-level mathematics courses. By the end of high school, males outperformed females on mathematical applications, which persisted even when participation was controlled. (age 13, grade 12)

Baglin, Roger F. Does "Nationally" Normed Really Mean Nationally? Journal of Educational Measurement 18: 97-107; Summer 1981. [grades K-12]

Baker, Eva L.; Herman, Joan L.; and Yeh, Jennie P. Fun and Games: Their Contribution to Basic Skills Instruction in Elementary School. American Educational Research Journal 18: 83-92; Spring 1981.

The observed use of puzzles, games, and, to a lesser extent, audiovisual devices appeared negatively related to achievement in mathematics and reading. (grades 2, 3)

Bany, Bruce P. and Carbno, W. Clifford. Preferred Inservice Activities Among Teachers of Elementary School Mathematics. Alberta Journal of Educational Research 27: 57-73; March 1981.

Preferences among subgroups were highly correlated. Interschool visitations were ranked highest of nine activities. (in-service elementary teachers)

Bar-Tal, D. and Guttmann, J. A Comparison of Teachers', Pupils' and Parents' Attributions Regarding Pupils' Academic Achievement. British Journal of Educational Psychology 51: 301-311; November 1981. [grades 4, 5]

Bassey, Michael. 131 Primary School Teachers' Opinions About Their College Training. Educational Research 23: 225-227; June 1981. [primary teachers]

Battista, Michael. The Interaction Between Two Instructional Treatments of Algebraic Structures and Spatial-Visualization Ability. Journal of Educational Research 74: 337-341; May/June 1981.

No significant interaction was found for verbal or verbal-spatial instruction on algebraic structures. (preservice elementary teachers)

Beady, Charles H., Jr.; Slavin, Robert E.; and Fennessey, Gail M. Alternative Student Evaluation Structures and a Focused Schedule of Instruction in an Inner-City Junior High School. Journal of Educational Psychology 73: 518-523; August 1981.

Focused instruction, along with certificates of recognition, caused

significantly higher mathematics achievement scores than did direct instruction. (grade 7)

Beck, Frances W.; Lindsey, Jimmy D.; and Frith, Greg H. Effects of Self-Contained Special Class Placement on Intellectual Functioning of Learning Disabled Students. Journal of Learning Disabilities 14: 280-282; May 1981.

The number of years in a self-contained class significantly affected arithmetic achievement. (ages 8-9)

Becker, Joanne Rossi. Differential Treatment of Females and Males in Mathematics Classes. Journal for Research in Mathematics Education 12: 40-53; January 1981.

There was a distinct trend for disproportionate teacher contacts with male students. (teachers in grade 10)

Beckerman, Terrill M. and Good, Thomas L. The Classroom Ratio of High- and Low-Aptitude Students and Its Effect on Achievement. American Educational Research Journal 18: 317-327; Fall 1981.

Both high- and low-aptitude students in mathematics classes where more than one-third of the students were high aptitude and less than one-third were low aptitude had greater achievement gains than students in less favorable mathematics classes. (grades 3, 4)

Behr, Merlyn J. and Wheeler, Margariete Montague. The Calculator for Concept Formation: A Clinical Status Study. Journal for Research in Mathematics Education 12: 323-338; November 1981.

Children were able to use a calculator for counting. (grades K, 1)

Bejar, Isaac I. and Blew, Edwin O. Grade Inflation and the Validity of the Scholastic Aptitude Test. American Educational Research Journal 18: 143-156; Summer 1981. [college]

Bell, Alan and Janvier, Claude. The Interpretation of Graphs Representing Situations. For the Learning of Mathematics 2: 34-42; July 1981. [age 12]

Bell, Alan; Swan, Malcolm; and Taylor, Glenda. Choice of Operation in Verbal Problems with Decimal Numbers. Educational Studies in Mathematics 12: 399-420; November 1981.

Exploratory interviews, the development of a diagnostic test, and the use of calculator-enriched teaching materials are described. The latter resulted in "dramatic success" in improving pupils' understanding of place value. (ages 12, 16)

Benner, Hazel and Wheldall, K. The 'Bottles Test': A Quick, Convenient, Alternative Procedure for Assessing Conservation of Liquid Quantity. British Journal of Educational Psychology 51: 230-234; June 1981. [ages 6, 7]

Bergan, John R. Models of the Structure of Some Rule-Governed Mathematical Behaviors. Contemporary Educational Psychology 6: 237-249; July 1981. [ages 7-11]

Bergman, Lars R. Is Intellectual Development More Vulnerable in Boys Than in Girls? Journal of Genetic Psychology 138: 175-181; June 1981. [ages 10-13]

Berti, Anna E. and Bombi, Anna S. The Development of the Concept of Money and Its Value: A Longitudinal Study. Child Development 52: 1179-1182; December 1981.

The development of notions about money proceeded in six definable stages. (ages 3-8)

Booth, Lesley R. Child-Methods in Secondary Mathematics. Educational Studies in Mathematics 12: 29-41; February 1981.

The use of informal, "naive" methods of limited applicability was found to be widespread even at age 15. (ages 12-15)

Bright, George W.; Harvey, John G.; and Wheeler, Margariete Montague. Varying Manipulative Game Constraints. Journal of Educational Research 74: 347-351; May/June 1981.

No significant differences in achievement were found between the use of fraction bars, pictures of the bars, or neither in games. (grades 5, 7)

Brittan, Elizabeth. Number, Space, and Time Conceptualization: The Role of Sensorimotor Activity. Journal of Genetic Psychology 139: 307-308; December 1981. [ages 5-9]

Broadbooks, Wendy J.; Elmore, Patricia B.; Pedersen, Katherine; and Bleyer, Dorothy R. A Construct Validation Study of the Fennema-Sherman Mathematics Attitudes Scales. Educational and Psychological Measurement 41: 551-557; Summer 1981.

Only one factor was analyzed for scale scores, accounting for 99.3% of the variance for females and 99.9% for males. For item scores, eight factors were found. (grades 7, 8)

Brown, Margaret. Is It An 'Add', Miss? Part 3. Mathematics in School 10: 26-28; January 1981.

Students showed lack of understanding about decimals. (ages 11-15)

Brush, Lorelei R. Some Thoughts for Teachers on Mathematics Anxiety. Arithmetic Teacher 29: 37-39; December 1981.

Students' anxiety in mathematics situations increased from grade 6 to grade 12. (grades 6-12)

Bryson, Rebecca and Bricken, Charles. Smoking Behavior of Scientists. Psychological Reports 49: 55-62; August 1981. [university professors]

Campbell, Patricia F. What Do Children See in Mathematics Textbook Pictures? Arithmetic Teacher 28: 12-16; January 1981.

Stories children told about pictures were described by four categories: general, set recognition, set and motion recognition, and perception of a mathematical relationship. (grade 1)

Campbell, Richard L. Intellectual Development, Achievement, and Self-Concept of Elementary Minority School Children. School Science and Mathematics 81: 200-204; March 1981. [grade 2]

Carnine, Douglas W. and Stein, Marcy. Organizational Strategies and Practice Procedures for Teaching Basic Facts. Journal for Research in Mathematics Education 12: 65-69; January 1981.

Emphasis on the counting relationship among addition facts resulted in higher achievement than no such emphasis. (ages 4-6, grade 1)

Carpenter, Thomas P.; Corbitt, Mary Kay; Kepner, Henry S., Jr.; Lindquist, Mary Montgomery; and Reys, Robert E. Calculators in Testing Situations: Results and Implications from National Assessment. Arithmetic Teacher 28: 34-37; January 1981.

Students performed routine computation better with the aid of a calculator, but problem-solving scores were poorer with calculator use. (ages 9, 13, 17)

Carpenter, Thomas P.; Corbitt, Mary Kay; Kepner, Henry S., Jr.; Lindquist, Mary Montgomery; and Reys, Robert E. Decimals: Results and Implications from National Assessment. Arithmetic Teacher 28: 34-37; April 1981.

Lack of conceptual understanding led to computational errors with decimals at age 13. Pupils aged 9 had little knowledge of decimals. (ages 9, 13)

Carpenter, Thomas P.; Corbitt, Mary Kay; Kepner, Henry S., Jr.; Lindquist, Mary Montgomery; and Reys, Robert E. What Are the Chances of Your Students Knowing Probability? Mathematics Teacher 74: 342-344; May 1981.

Percentage of correct responses on probability items increased with age, but was still low. (ages 13, 17)

Carpenter, Thomas P.; Hiebert, James; and Moser, James M. Problem Structure and First-Grade Children's Initial Solution Processes for Simple Addition and Subtraction Problems. Journal for Research in Mathematics Education 12: 27-39; January 1981.

Children who had no formal instruction in addition and subtraction successfully solved problems, using processes that directly represented the action or relationship in a problem. (grade 1)

Champion, Dennis W.; Lowe, Roland C.; and Cavior, Norman. Egocentrism in Elementary School Children: Validity and Application of Assessment Techniques. Psychological Reports 48: 27-34; February 1981. [grades K, 2, 4, 6]

Clement, John; Lochhead, Jack; and Monk, George S. Translation Difficulties in Learning Mathematics. American Mathematical Monthly 88: 286-290; April 1981.

Many students made reversal errors when expressing relationships algebraically. (college)

Cooney, Thomas J.; Hirstein, James J.; and Davis, Edward J. The Effects of Two Strategies for Teaching Two Mathematical Skills. Journal for Research in Mathematics Education 12: 220-225; May 1981.

Groups receiving understanding-then-practice tended to be slightly faster than practice-then-understanding groups, but were slightly poorer at generalizing and justifying the algorithm. (grade 6)

Cope, D. E. and Murphy, A. J. The Value of Strategies in Problem Solving. Journal of Psychology 107: 11-16; January 1981.

Strategies were found to be necessary for the solution of problems that involve the organization of well-understood parts. Use of strategies can be taught as an intellectual skill. (college)

Cross, Tony. Maths Teachers' Pay. Mathematics in School 10: 18-19; January 1981. [secondary teachers]

Danner, Fred W. and Lonky, Edward. A Cognitive-Developmental Approach to the Effects of Rewards on Intrinsic Motivation. Child Development 52: 1043-1052; September 1981. [ages 4-10 (grades K, 1, 2, 4)]

DeBlassio, John K. and Bell, Frederick H. Attitudes Toward Computers in High School Mathematics Courses. International Journal of Mathematical Education in Science and Technology 12: 47-56; January/February 1981.

Positive correlations were found between students' attitudes toward using a computer and attitudes toward mathematics and instructional setting, plus achievement variables. (grades 11, 12)

DeCorte, Erik and Verschaffel, Lieven. Children's Solution Processes in Elementary Arithmetic Problems: Analysis and Improvement. Journal of Educational Psychology 73: 765-779; December 1981.

Lessons focusing on the notion of the equality sign, the part-whole relation, and verification were found to be successful. (grades 1, 2)

DeLuca, Frederick P. Application of Cluster Analysis to the Study of Piagetian Stages of Intellectual Development. Journal of Research in Science Teaching 18: 51-59; January 1981. [ages 9-18]

Deutsch, Francine. Cognitive Processes and Social Cognition in Kindergarten Children. Journal of Genetic Psychology 138: 63-73; March 1981. [grade K]

DeVecchi, James Martin. The Construction of a Logical-Empirical Structure of Knowledge for Differential Calculus Using a Theoretical Framework Based on Learning Hierarchy Theory and Order Theory. Journal for Research in Mathematics Education 12: 163-164; May 1981. [college]

Dossey, John A. The Current Status of Preservice Elementary Teacher-Education Programs. Arithmetic Teacher 29: 24-26; September 1981.

Ninety-two per cent of the responding colleges indicated they require at least one course in mathematics content; 90 per cent require at least one methods course. (elementary preservice)

DuRapau, V. J., Jr. and Carry, L. Ray. Interaction of General Reasoning Ability and Processing Strategies in Geometry Instruction. Journal for Research in Mathematics Education 12: 15-26; January 1981.

Students with high reasoning scores, those with high analytic processing scores, and those with high gestalt processing scores profited more from the transformational treatment. (grade 10)

Eisenberg, Theodore. Remedial Mathematics and Open Admissions. School Science and Mathematics 81: 341-346; April 1981.

Only 20 to 40 per cent of the students in the remedial course took another mathematics course; almost half will fail. (college)

Eisenberg, Theodore; Frekso, Barbara; and Carmeli, Miriam. An Assessment of Cognitive Changes in Socially Disadvantaged Children as a Result of a One-to-One Tutoring Program. Journal of Educational Research 74: 311-314; May/June 1981. [grades 5-7]

Eshel, Yohanan and Klein, Zev. Development of Academic Self-Concept of Lower-Class and Middle-Class Primary School Children. Journal of Educational Psychology 73: 287-293; April 1981. [grades 1-4]

Evertson, Carolyn M. and Veldman, Donald J. Changes Over Time in Process Measures of Classroom Behavior. Journal of Educational Psychology 73: 156-163; April 1981.

Changes were not dramatic, but the trends suggested that a deterioration of behaviors occurs in late spring. (grades 7, 8)

Fennema, Elizabeth and Carpenter, Thomas P. Sex-Related Differences in Mathematics: Results from National Assessment. Mathematics Teacher 74: 554-559; October 1981.

Little difference in male-female achievement was found at ages 9 and 13, but females scored lower at age 17. (ages 9, 13, 17)

Fennema, Elizabeth; Wolleat, Patricia L.; Pedro, Joan Daniels; and Becker, Ann DeVaney. Increasing Women's Participation in Mathematics: An Intervention Study. Journal for Research in Mathematics Education 12: 3-14; January 1981.

Females who had a special program increased their knowledge about sex-related differences in mathematics, indicated they would study more mathematics, and actually enrolled in more courses. (grades 9-11)

Ferrero, Grace W. and Creek, Roy J. The Relationship of School-Related Variables to Functional Economic Competency. Journal of Educational Research 74: 170-174; January/February 1981. [grade 12]

Fischbein, E.; Tirosh, D.; and Melamed, U. Is It Possible to Measure the Intuitive Acceptance of a Mathematical Statement? Educational

Studies in Mathematics 12: 491-512; November 1981.

Three types of problematic situations to check an intuitive acceptance were identified. (grades 8, 9)

Fisk, Robert A. and Janzen, Henry L. Identifying Learning Disabled Students with a Selected Psychoeducational Test Battery. Alberta Journal of Educational Research 27: 252-263; September 1981. [grades 4-6]

Floden, R. E.; Porter, A. C.; Schmidt, W. H.; Freeman, D. J.; and Schwille, J. R. Responses to Curriculum Pressures: A Policy-Capturing Study of Teacher Decisions About Content. Journal of Educational Psychology 73: 129-141; April 1981.

Teachers indicated general willingness to add topics to the curriculum, but reluctance to delete topics. Tests and objectives had significantly greater effects than other factors in regard to adding topics. (teachers in grade 4)

Foshay, Wellesley, R. and Misanchuk, Earl R. Toward the Multivariate Modeling of Achievement, Aptitude, and Personality. Journal of Educational Research 74: 352-357; May/June 1981. [college]

Fraser, Barry J. and Koop, Anthony J. Changes in Affective and Cognitive Outcomes Among Students Using a Mathematical Play. School Science and Mathematics 81: 55-60; January 1981.

Students had some significant changes in both attitude and knowledge after using the play about Thales. (grade 9)

Fuller, Gerald B. and Goh, David S. Intelligence, Achievement, and Visual-Motor Performance Among Learning Disabled and Emotionally Impaired Children. Psychology in the Schools 18: 261-268; July 1981. [elementary]

Galbraith, P. L. Aspects of Proving: A Clinical Investigation of Process. Educational Studies in Mathematics 12: 1-28; February 1981.

Differences were found between the agreed meaning of some mathematical terms and the meaning ascribed to them by students. Three clusters of response patterns were noted. (ages 12-17)

Giles, Eunice J. and Gilbert, John K. Prompting in One-to-One Problem-Solving Situations. International Journal of Mathematical Education in Science and Technology 12: 125-133; January/February 1981.

Spontaneously offered prompts fell into three categories: motivational, process, and product orientation. (college)

Golumb, Claire and Bonen, Shoshana. Playing Games of Make-Believe: The Effectiveness of Symbolic Play Training with Children Who Failed to Benefit from Early Conservation Training. Genetic Psychology Monographs 104: 137-159; August 1981. [grade K]

Gray, J. and Satterly, D. Formal or Informal? A Re-Assessment of the British Evidence. British Journal of Educational Psychology 51:

187-196; June 1981.

The reanalysis did not conflict with earlier conclusions that "formal" teaching styles were only modestly related to progress in mathematics and English. (elementary teachers)

Hannafin, Michael J. Effects of Teacher and Student Goal Setting and Evaluations on Mathematics Achievement and Student Attitudes. Journal of Educational Research 74: 321-326; May/June 1981.

Students who set their own learning goals attained more of them. (grade 6)

Hansen, Thomas P.; Klassen, Daniel L.; Anderson, Ronald E.; and Johnson, David C. What Teachers Think Every High School Graduate Should Know About Computers. School Science and Mathematics 81: 467-472; October 1981.

Teachers supported the idea that every student should have some minimal understanding about computers, but the extent of coverage of computer topics was minimal. (secondary in-service teachers)

Hanson, Susan Glikbarg. Evolution of Metrics in Textbooks. School Science and Mathematics 81: 585-595; November 1981.

Analysis of three textbook series for grade 4 mathematics indicated that metric conversion has had an impact on the curriculum. (grade 4)

Harnisch, Delwyn L. and Linn, Robert L. Analysis of Item Response Patterns: Questionable Test Data and Dissimilar Curriculum Practices. Journal of Educational Measurement 18: 133-146; Fall 1981. [grades 4, 8, 11]

Harrison, Jo-Ann; Strauss, Helen; and Glaubman, Rivkah. The Impact of Open and Traditional Classrooms on Achievement and Creativity: The Israeli Case. Elementary School Journal 82: 27-35; September 1981. [grades 1, 3, 5]

Harrison, Jo-Ann; Strauss, Helen; and Glaubman, Rivkah. Who Benefits from the Open Classroom? The Interaction of Social Background with Class Setting. Journal of Educational Research 75: 87-94; November/December 1981. [grades 1, 3, 5]

Hart, K. Fractions. Mathematics in School 10: 13-15; March 1981.

Data on the performance of British students on fractions are given. Students probably did not see them as an extension of the set of whole numbers. (ages 12-15)

Hasemann, Klaus. On Difficulties with Fractions. Educational Studies in Mathematics 12: 71-87; February 1981.

Many students were only able to apply remembered rules to the solution of problems, without knowing whether the rule works. (ages 12-15)

Hashway, Robert M. Sex Differences in Mathematics Achievement - Are

They Real? Phi Delta Kappan 63: 139-140; October 1981.

Males and females did not differ significantly in their achievement in five of eight content domains. Females scored higher on fractions, while males scored higher on geometric principles and ratio, proportion, and per cent. (college freshmen)

Hector, Judith H. and Frandsen, Henry. Calculator Algorithms for Fractions with Community College Students. Journal for Research in Mathematics Education 12: 349-355; November 1981.

No significant differences were found between groups using calculators with conventional algorithms, calculator-based algorithms, or conventional algorithms. (college)

Heller, Kirby A. and Parsons, Jacquelynne Eccles. Sex Differences in Teachers' Evaluative Feedback and Students' Expectancies for Success in Mathematics. Child Development 52: 1013-1019; September 1981.

No sex differences were found in the patterns of evaluative feedback used by teachers, or in students' expectancies for success on familiar tasks. Girls had lower expectancies for success on unfamiliar or future tasks. (grades 7, 9)

Heywood, J. and Youngman, M. B. Pupils' Reactions to Multiple Choice Items in Mathematics. Educational Research 23: 228-229; June 1981. [age 15+]

Hiebert, James. Units of Measure: Results and Implications from National Assessment. Arithmetic Teacher 28: 38-43; February 1981.

Students were quite proficient at simple measuring skills but did not understand certain underlying concepts of measurement. (ages 9, 13)

Hiebert, James. Cognitive Development and Learning Linear Measurement. Journal for Research in Mathematics Education 12: 197-211; May 1981.

The Piagetian reasoning abilities of length conservation and transitivity were required to learn some but not all measurement concepts. (grade 1)

Hirsch, Christian R. An Exploratory Study of the Effectiveness of a "Didactical Shadow" Seminar in Abstract Algebra. School Science and Mathematics 81: 459-466; October 1981.

The group having the shadow seminar improved significantly in understanding of the algebra of the real number system, but not in other knowledge or attitudes. (preservice teachers)

Hirstein, James J. The Second National Assessment in Mathematics: Area and Volume. Mathematics Teacher 74: 704-708; December 1981.

Students scored low on most items, indicating conceptual problems. (ages 13, 17)

Horodezky, Betty and Weinstein, Pauline Smith. A Comparative Analysis

of Vocabulary Load of Three Provincially Adopted Primary Arithmetic Series. Alberta Journal of Educational Research 27: 121-132; June 1981.

The total number of running words differed considerably between series, with texts having few words in common. (grades 1-3)

Houlihan, Dorothy M. and Ginsburg, Herbert P. The Addition Methods of First- and Second-Grade Children. Journal for Research in Mathematics Education 12: 95-106; March 1981.

First graders used a variety of counting procedures to solve addition examples, while second graders used both counting and non-counting procedures. (grades 1, 2)

House, Peggy A. One Small Step for the Mathematically Gifted. School Science and Mathematics 81: 195-199; March 1981.

The program was successful in accelerating the algebra learning of very talented students. (grades 7-9)

Howe, Ann C. and Shayer, Michael. Sex-Related Differences on a Task of Volume and Density. Journal of Research in Science Teaching 18: 169-175; March 1981. [ages 10, 11]

Howe, Trevor G. and Gerlovich, Jack A. Critical Shortages of Mathematics and Science Teachers in Iowa. School Science and Mathematics 81: 25-33; January 1981.

The number of vacancies for mathematics teachers far exceeded the number of mathematics teacher education graduates in Iowa from 1970-79. (teachers in grades K-12)

Hoz, Ron. The Effects of Rigidity on School Geometry Learning. Educational Studies in Mathematics 12: 171-190; May 1981.

Geometrical Rigidity was found to be a cognitive style construct. (grade 9)

Hudson, H. T. and Rottmann, Ray M. Correlation Between Performance in Physics and Prior Mathematics Knowledge. Journal of Research in Science Teaching 18: 291-294; July 1981. [college]

Ireton, Harold and Shing-Lun, Kin. Minnesota Preschool Inventory Identification of Children at Risk for Kindergarten Failure. Psychology in the Schools 18: 394-401; October 1981. [grade K]

Jamison, Dean T.; Searle, Barbara; Galda, Klaus; and Heyneman, Stephen P. Improving Elementary Mathematics Education in Nicaragua: An Experimental Study of the Impact of Textbooks and Radio on Achievement. Journal of Educational Psychology 73: 556-567; August 1981. [grade 1]

Janicki, Terence C. and Peterson, Penelope L. Aptitude-Treatment Interaction Effects of Variations in Direct Instruction. American Educational Research Journal 18: 63-82; Spring 1981.

Students who had positive attitudes and an internal locus of

control did better on a fractions unit when small groups were used than in large-group direct instruction. (grades 4, 5)

Janvier, Claude. Use of Situations in Mathematics Education. Educational Studies in Mathematics 12: 113-122; February 1981.

The impact of situations on problem-solving ability is discussed in relation to students' answers to several problems. (ages 11-15)

Kamhi, Alan G. Developmental vs. Difference Theories of Mental Retardation: A New Look. American Journal of Mental Deficiency 86: 1-7; July 1981. [MA 5-9]

Kansky, Bob and Olson, Melfried. Career Choice: Do Students' Precollege Mathematics Programs Deny It? School Science and Mathematics 81: 656-664; December 1981.

College-bound women terminated their study of mathematics much earlier than college-bound men did. One-fourth of the students had not taken sufficient mathematics for the college program they wanted. (grade 12)

Karmos, Joseph S.; Scheer, Janet; Miller, Ann; and Bardo, Harold. The Relationship of Math Achievement to Impulsivity in Mathematically Deficient Elementary School Students. School Science and Mathematics 81: 685-688; December 1981.

Impulsivity accounted for at least 20 per cent of the variability in mathematics scores for half of the 14 areas studied; computation was correlated most strongly. (elementary)

Karweit, Nancy and Slavin, Robert E. Measurement and Modeling Choices in Studies of Time and Learning. American Educational Research Journal 18: 157-171; Summer 1981.

Mathematics achievement was not consistently related to the time measures. (grades 2-5)

Kemme, S. L. References of Speech Acts as Characteristics of Mathematical Classroom Conversation. Educational Studies in Mathematics 12: 43-58; February 1981.

Portions of classroom dialogues are discussed. (grade 7)

Kerr, Donald R., Jr. A Geometry Lesson from National Assessment. Mathematics Teacher 74: 27-32; January 1981.

Students appeared to have only a superficial knowledge of geometry. (ages 13, 17)

Kidder, F. Richard and Lamb, Charles E. Conservation of Length: An Invariant--A Study and a Follow-Up. Journal for Research in Mathematics Education 12: 225-230; May 1981.

The two studies differed in findings about whether conservation of length is a necessary condition for doing transformation tasks. (grades 2-4)

Kleiman, Glenn; Humphrey, Mary; and Lindsay, Peter H. Microcomputers

and Hyperactive Children. Creative Computing 7: 93-94; March 1981.

Children did almost twice as many exercises on the computer as they did with paper and pencil, although no differences were found in proportion correct or time. (ages 6-14)

Klein, Alice E. Redundancy in the Iowa Tests of Basic Skills. Educational and Psychological Measurement 41: 537-544; Summer 1981. [grades 4, 8]

Knight, Martha F., et al. A Four-Year Evaluation of Consulting Teacher Service. Behavioral Disorders 6: 92-100; February 1981. [mean age 9]

Kraus, William H. Using a Computer Game to Reinforce Skills in Addition Basic Facts in Second Grade. Journal for Research in Mathematics Education 12: 152-155; March 1981.

The computer game group responded correctly to twice as many items on the speed test as did the control group. (grade 2)

Küchemann, Dietmar. Cognitive Demand of Secondary School Mathematics Items. Educational Studies in Mathematics 12: 301-316; August 1981.

Data from a British assessment (CSMS) were reanalyzed to determine facility levels. (age 14)

Lancy, David F. The Indigenous Mathematics Project: An Overview. Educational Studies in Mathematics 12: 445-453; November 1981. [elementary]

Lang, Bryan and Ruane, Peter. Geometry in English Secondary Schools. Educational Studies in Mathematics 12: 123-132; February 1981. [secondary]

Lantz, Alma E. and Smith, Gregory P. Factors Influencing the Choice of Nonrequired Mathematics Courses. Journal of Educational Psychology 73: 825-837; December 1981.

A factor involving encouragement from significant others and subjective value placed on mathematics was the best predictor of taking non-required mathematics courses. (grades 9, 10)

Lawrence, D. The Development of a Self-Esteem Questionnaire. British Journal of Educational Psychology 51: 245-251; June 1981. [age 9]

Lean, Glen and Clements, M. A. (Ken). Spatial Ability, Visual Imagery, and Mathematical Performance. Educational Studies in Mathematics 12: 267-299; August 1981.

Students who preferred to process mathematical information by verbal-logical means tended to outperform more visual students on mathematical tests. (college)

Leinhardt, Gaea and Seewald, Andrea Mar. Overlap: What's Tested, What's Taught? Journal of Educational Measurement 18: 85-96;

Summer 1981. [grades 1, 3]

Lemoyne, Gisele and Favreau, Mireille. Piaget's Concept of Number Development: Its Relevance to Mathematics Learning. Journal for Research in Mathematics Education 12: 179-196; May 1981.

The performance of the operational group was superior to that of the non-operational group on addition and subtraction problems. (ages 6, 7)

Linn, Robert L. and Harnisch, Delwyn L. Interactions Between Item Content and Group Membership on Achievement Test Items. Journal of Educational Measurement 18: 109-118; Summer 1981. [grade 8]

Lloyd, John; Saltzman, Nancy J.; and Kauffman, James M. Predictable Generalization in Academic Learning as a Result of Preskills and Strategy Training. Learning Disability Quarterly 4: 203-216; Spring 1981.

Preskills alone did not enable students to perform multiplication tasks correctly. (ages 8-9)

Lyson, Thomas A. The Changing Sex Composition of College Curricula: A Shift-Share Approach. American Educational Research Journal 18: 503-511; Winter 1981. [college]

MacDonald, Theodore H. Teacher Perceived Areas of Difficulty in Primary School Mathematics. Australian Mathematics Teacher 37: 22-24; August 1981. [teachers in grades 1-6]

Mansfield, Helen. A Report on Pre-Service Mathematics Education for Primary School Teachers in Australia. Australian Mathematics Teacher 36: 12-15; January 1981. [elementary preservice teachers]

Margolis, Howard; Sheridan, Rosemary; and Lemanowicz, James. The Efficiency of Myklebust's Pupil Rating Scale for Detecting Reading and Arithmetic Difficulties. Journal of Learning Disabilities 14: 267-268, 302; May 1981. [grades 1, 2]

Matthews, Julia. An Investigation into Subtraction. Educational Studies in Mathematics 12: 327-338; August 1981.

Both children and selected adults failed to give correct answers to all six subtraction examples posed. (age 11, adult)

Matthews, Karen A. and Volkin, Janice I. Efforts to Excel and the Type A Behavior Pattern in Children. Child Development 52: 1283-1289; December 1981. [grades 4, 6]

May, Richard B. and Norton, Janice M. Training-Task Orders and Transfer in Conservation. Child Development 52: 904-913; September 1981. [grades K, 1]

McClinton, Sandra L. Verbal Problem Solving in Young Children. Journal of Educational Psychology 73: 437-445; June 1981.

No significant differences on problem solving scores for pupils

aged 6 and 8 were found between those taught verbally, visually, or kinesthetically. (ages 4, 6, 8)

McKillip, William D. Computational Skill in Division: Results and Implications from National Assessment. Arithmetic Teacher 28: 34-37; March 1981.

Data on division items are briefly presented, followed by discussion of how to teach division effectively. (ages 9, 13)

McLaughlin, Judith A. Development of Children's Ability to Judge Relative Numerosity. Journal of Experimental Child Psychology 31: 103-114; February 1981.

All children successfully judged relative numerosity when number covaried with length or density, but only concrete operational children were successful when number did not covary with other dimensions. (ages 3-7)

Mendelson, Morton J. and Lee, Siu Ping. The Effects of Symmetry and Contour on Recognition Memory in Children. Journal of Experimental Child Psychology 32: 373-388; December 1981. [grades pre-K, K, 2]

Messick, Samuel and Jungeblut, Ann. Time and Method in Coaching for the SAT. Psychological Bulletin 89: 191-216; March 1981. [secondary]

Meyer, Ruth Ann. Intellectual Abilities That Discriminate Good and Poor Problem Solvers. Journal for Research in Mathematics Education 12: 156-159; March 1981.

Verbal, Numerical, and especially Induction abilities appear important to successful mathematical problem solving. (grade 4)

Moffitt, Terrie E. Vocabulary and Arithmetic Performance of Father-Absent Boys. Child Study Journal 10: 233-241; 1981. [elementary]

Munro, Barbara Hazard. Dropouts from Higher Education: Path Analysis of a National Sample. American Educational Research Journal 18: 133-141; Summer 1981. [college]

Murphy, R. J. L. Symposium: Examinations, O-Level Grades and Teachers' Estimates as Predictors of the A-Level Results of UCCA Applicants. British Journal of Educational Psychology 51: 1-9; February 1981. [college]

Nash, B. C. The Effects of Classroom Spatial Organisation on Four- and Five-Year-Old Children's Learning. British Journal of Educational Psychology 51: 144-155; June 1981. [ages 4, 5]

Nibbelink, William H. A Comparison of Vertical and Horizontal Forms for Open Sentences Relative to Performance by First Graders, Some Suggestions. School Science and Mathematics 81: 613-619; November 1981.

Pupils scored 66 per cent correct on horizontal open sentences and 74 per cent correct on the vertical form. (grade 1)

Nibbelink, William H. and Witzenberg, Harvey G. A Comparison of Two Methods for Teaching Younger Children to Tell Time. School Science and Mathematics 81: 429-435; May/June 1981.

The group devoting more time to minute readings which were not multiples of five scored higher than the group focusing on multiples of five. (grade 2)

Nummedal, Susan G. and Collea, Francis P. Field Independence, Task Ambiguity, and Performance on a Proportional Reasoning Task. Journal of Research in Science Teaching 18: 255-260; May 1981. [college]

Nyberg, V. R. and Blackmore, D. E. A Longitudinal Study of Grade III Achievement in Edmonton Public Schools. Alberta Journal of Educational Research 27: 154-159; June 1981.

Mathematical skill performance in Edmonton declined slightly from 1956 to 1977 in specific areas. (grade 3)

O'Donnell, Dennis H. Assessment Within Schools: A Study in One County. Educational Research 24: 43-48; November 1981. [elementary, secondary]

Olson, Melfried and Kansky, Bob. Mathematics Preparation Versus Career Aspirations: Sex-Related Differences Among College-Bound Wyoming High School Seniors. Journal for Research in Mathematics Education 12: 375-379; November 1981.

Number of mathematics courses taken and level of mathematics achieved varied by sex, with males favored. (grade 12)

Omizo, Michael M.; Hammett, Victoria L.; Loffredo, Donald A.; and Michael, William B. The Dimensions of Self-Concept (DOSC) as Predictors of Academic Achievement Among Mexican-American Junior High School Students. Educational and Psychological Measurement 41: 835-842; Fall 1981. [grade 7]

Owston, Ronald D. Systematic Computational Errors and Achievement in Elementary Mathematics. Alberta Journal of Educational Research 27: 114-120; June 1981.

High achievers tended to make non-systematic errors in multiplication; low achievers tended to make systematic errors. More systematic errors occurred with subtraction, followed by multiplication and then addition. (grade 5)

Parr, Gerald D.; Baca, Fernie; and Dixon, Paul. Individualized Versus Group Instruction in Bilingual Education: A Two-Year Study. Elementary School Journal 81: 223-227; March 1981. [grade 2]

Peck, Donald M. and Jencks, Stanley M. Share and Cover. Arithmetic Teacher 28: 38-39; March 1981.

Excerpts from interviews with two ninth-graders illustrate the conclusion from interviews with other students that they do not understand fully what fraction symbols mean. (grade 9)

Peck, Donald M. and Jencks, Stanley M. Conceptual Issues in the Teaching and Learning of Fractions. Journal for Research in Mathematics Education 12: 339-348; November 1981.

Students lacked conceptual understanding of fractions; they appeared to "sift through rules" that seemed almost meaningless to them to find one that might work. (grade 6)

Pedro, Joan Daniels; Wolleat, Patricia; Fennema, Elizabeth; and Becker, Ann DeVaney. Election of High School Mathematics by Females and Males: Attributions and Attitudes. American Educational Research Journal 18: 207-218; Summer 1981.

A small set of variables was found to explain some of the variance in female and male mathematics plans. (secondary)

Pepper, Jeff. Following Students' Suggestions for Rewriting a Computer Programming Textbook. American Educational Research Journal 18: 259-269; Fall 1981. [college]

Peterson, Penelope L.; Janicki, Terence C.; and Swing, Susan R. Ability x Treatment Interaction Effects on Children's Learning in Large-Group and Small-Group Approaches. American Educational Research Journal 18: 453-473; Winter 1981.

High- and low-ability students did better on a geometry unit using a small-group approach than a large-group approach. Medium-ability students did slightly better with a large-group approach. (grades 4, 5)

Pinker, Aron. On the Assimilation of the Concept "Set" in the Elementary School Mathematics Texts. International Journal of Mathematical Education in Science and Technology 12: 93-100; January/February 1981.

Students were unable to detect incorrect use of the concept "set" in excerpts from textbooks. (elementary preservice teachers)

Plake, Barbara S.; Thompson, Patricia A.; and Lowry, Stephen. Effect of Item Arrangement, Knowledge of Arrangement, and Test Anxiety on Two Scoring Methods. Journal of Experimental Education 49: 214-219; Summer 1981.

No significant effects for order, knowledge, or anxiety were found on several arrangements of a mathematics test. (college)

Pollatsek, A.; Lima, S.; and Well, A. D. Concept or Computation: Students' Understanding of the Mean. Educational Studies in Mathematics 12: 191-204; May 1981.

Most students had little knowledge about computing means and the concept of the mean. (college)

Post, Thomas R. Fractions: Results and Implications from National Assessment. Arithmetic Teacher 28: 26-31; May 1981.

Data indicated that students aged 9 were just beginning to attain fraction concepts in relation to regions and sets. Over 60 per cent of 13-year-olds answered equivalent fraction items correctly, but

fewer scored well on computation items. (ages 9, 13)

Rees, Ruth. Mathematically Gifted Pupils: Some Findings from Exploratory Studies of Mathematical Abilities. Mathematics in School 10: 20-23; May 1981.

Some findings from a set of tests designed to indicate incorrect ways of thinking are discussed. (secondary)

Roberge, J. J. and Flexer, B. K. Re-Examination of the Covariation of Field Independence, Intelligence and Achievement. British Journal of Educational Psychology 51: 235-236; June 1981. [grades 6-8]

Robitaille, David F. and Sherrill, James M. Low Achievers' Confidence in Their Computational Algorithms. Alberta Journal of Educational Research 27: 232-239; September 1981.

The percentage of low achievers having high confidence in the algorithms they used was: addition, 85%; subtraction, 79%; multiplication, 70%; division, 52%. (grades 5-8)

Rose, Janet S. and Medway, Frederic J. Measurement of Teachers' Beliefs in Their Control Over Student Outcome. Journal of Educational Research 74: 185-190; January/February 1981. [teachers in grade 4]

Rosnick, Peter. Some Misconceptions Concerning the Concept of Variable. Mathematics Teacher 74: 418-420; September 1981.

Students' lack of understanding about the meaning of a variable in an equation is discussed. (college)

Ross, Steven M. and Rakow, Ernest A. Learner Control Versus Program Control as Adaptive Strategies for Selection of Instructional Support on Math Rules. Journal of Educational Psychology 73: 745-753; October 1981. [college]

Rowell, J. A. and Dawson, C. J. Volume, Conservation and Instruction: A Classroom Based Solomon Four Group Study of Conflict. Journal of Research in Science Teaching 18: 533-546; November 1981. [grade 8]

Russell, James. Dyadic Interaction in a Logical Reasoning Problem Requiring Inclusion Ability. Child Development 52: 1322-1325; December 1981. [ages 4-8]

Saxe, Geoffrey B. Body Parts as Numerals: A Developmental Analysis of Numeration Among the Oksapmin in Papua New Guinea. Child Development 52: 306-316; March 1981. [ages 5-16]

Saxe, Geoffrey B. and Shaheen, Sandra. Piagetian Theory and the Atypical Case: An Analysis of the Developmental Gerstmann Syndrome. Journal of Learning Disabilities 14: 131-135, 172; March 1981. [age 9]

Saxe, Geoffrey B. and Sicilian, Stephen. Children's Interpretation of Their Counting Accuracy: A Developmental Analysis. Child

Development 52: 1330-1332; December 1981.

As age increased, pupils' estimates of their counting increasingly corresponded to their actual counting accuracy. (ages 5, 7, 9)

Schoedler, James. A Comparison of the Use of Active Game Learning with a Conventional Teaching Approach in the Development of Concepts in Geometry and Measurement at the Second Grade Level. School Science and Mathematics 81: 365-370; May/June 1981.

No significant difference in achievement was found between groups taught by an active game medium or by the textbook approach. (grade 2)

Schoen, Harold L.; Friesen, Charles D.; Jarrett, Joscelyn A.; and Urbatsch, Tonya D. Instruction in Estimating Solutions of Whole Number Computations. Journal for Research in Mathematics Education 12: 165-178; May 1981.

Groups taught estimation via whole-group, meaningful instruction, or CAI drill-and-practice learned to estimate; the meaningful instruction group retained and transferred the skill. (grades 4-6)

Schofield, Hilary L. Teacher Effects on Cognitive and Affective Pupil Outcomes in Elementary School Mathematics. Journal of Educational Psychology 73: 462-471; August 1981.

High achievement and high attitudes in teachers were each significantly related to high achievement in pupils, but also related to least favorable pupil attitudes toward mathematics. (preservice teachers in grade 6)

Schunk, Dale H. Modeling and Attributional Effects on Children's Achievement: A Self-Efficacy Analysis. Journal of Educational Psychology 73: 93-105; February 1981.

Both modeling and didactic instruction enhanced persistence and accuracy on division, while modeling produced greater gains in accuracy. (ages 9-11)

Sells, Lucy W. The Critical Role of Elementary School Mathematics in Equalizing Opportunity. Arithmetic Teacher 29: 44-45; September 1981.

Findings from a study of high school enrollments and from college students' recruitment offers are noted, to focus attention on the need to develop arithmetic skills. (secondary, college)

Shumway, Richard J.; White, Arthur L.; Wheatley, Grayson H.; Reys, Robert E.; Coburn, Terrence G.; and Schoen, Harold L. Initial Effect of Calculators in Elementary School Mathematics. Journal for Research in Mathematics Education 12: 119-141; March 1981.

No measurable detrimental effects were found for calculator use. Students learned basic facts and achievement was good despite calculator use. (grades 2-6)

Silver, Edward A. Recall of Mathematical Problem Information: Solving Related Problems. Journal for Research in Mathematics Education

12: 54-64; January 1981.

Krutetskii's claim that high-ability students tend to recall information about the structure of mathematical problems they have solved was supported, in general, along with a significant transfer effect to related problems. (grade 7)

Singh, P. Productivity of Schools in Relation to Process and Structure Variables of Educational Environment: A Study of Achievement in Geometry. British Journal of Educational Psychology 51: 197-210; June 1981. [grade 10]

Skon, Linda; Johnson, David W.; and Johnson, Roger T. Cooperative Peer Interaction Versus Individual Competition and Individualistic Efforts: Effects on the Acquisition of Cognitive Reasoning Strategies. Journal of Educational Psychology 73: 83-92; February 1981.

Cooperative interaction promoted higher achievement and the discovery of superior cognitive reasoning strategies. (grade 1)

Slavin, Robert E. and Karweit, Nancy L. Cognitive and Affective Outcomes of an Intensive Student Team Learning Experience. Journal of Experimental Education 50: 29-35; Fall 1981.

Use of Teams-Games-Tournaments was not found to affect mathematics achievement significantly. (grades 4, 5)

Smead, Valerie S. and Chase, Clinton I. Student Expectations as They Relate to Achievement in Eighth Grade Mathematics. Journal of Educational Research 75: 115-120; November/December 1981.

Individual expectations were found to relate to subsequent achievement. (grade 8)

Smith, Lehi T. and Haley, J. M. Inservice Education: Teacher Response and Student Achievement. School Science and Mathematics 81: 189-194; March 1981.

Teachers reported changes in attitude and understanding as a result of the in-service program. It had a significant effect on achievement for the fifth graders tested. (elementary teachers and grade 5 students)

Smith, Susan R.; Trueblood, Cecil R.; and Szabo, Michael. Conservation of Length and Instruction in Linear Measurement in Young Children. Journal of Research in Science Teaching 18: 61-68; January 1981.

Length conservers did not outperform non-conservers on manipulative measurement criteria. (grades 1, 2)

Smith, Walter S. and Schroeder, Cynthia K. Preadolescents' Learning and Retention of a Spatial Visualization Skill. School Science and Mathematics 81: 705-709; December 1981.

Instruction on spatial visualization resulted in better performance and retention. No sex differences were found. (grades 4, 5)

Southall, Carey T. and Dumas, Wayne. Early Classroom Field Experiences

in State Universities of Seven Midwestern States. Contemporary Education 52: 203-208; Summer 1981. [preservice teachers]

Sovchik, Robert; Meconi, L. J.; and Steiner, Evelyn. Mathematics Anxiety of Preservice Elementary Mathematics Methods Students. School Science and Mathematics 81: 643-648; December 1981.

The mathematics methods course reduced mathematics anxiety. (elementary preservice)

Squire, Barry F.; Cathcart, W. George; and Worth, Joan E. Effect of Mode of Instruction on Prospective Elementary Teachers' Attitudes Toward Mathematics. Alberta Journal of Educational Research 27: 35-45; March 1981.

Students having a seminar-workshop approach showed greater improvement in attitude toward mathematics than those having a lecture approach. (preservice elementary teachers)

Staats, Arthur W. and Burns, G. Leonard. Intelligence and Child Development: What Intelligence Is and How It Is Learned and Functions. Genetic Psychology Monographs 104: 237-301; November 1981. [preschool, grades K, 1]

Standifer, Charles E. and Maples, Ernest G. Achievement and Attitude of Third-Grade Students Using Two Types of Calculators. School Science and Mathematics 81: 17-24; January 1981.

The hand-held calculator group scored significantly higher than the programmed-feedback calculator group. (grade 3)

Steffe, Leslie; Firth, Donald; and Cobb, Paul. On the Nature of Counting Activity: Perceptual Unit Items. For the Learning of Mathematics 2: 13-21; July 1981.

The nature of counting for three children is described. (age 6)

Stott, Denis H. Behaviour Disturbance and Failure to Learn: A Study of Cause and Effect. Educational Research 23: 163-172; June 1981. [grade 2]

Tall, David and Shlomo, Vinner. Concept Image and Concept Definition in Mathematics with Particular Reference to Limits and Continuity. Educational Studies in Mathematics 12: 151-169; May 1981. [secondary, college]

Tennyson, Robert D.; Chao, Johnny N.; and Youngers, Judith. Concept Learning Effectiveness Using Prototype and Skill Development Presentation Forms. Journal of Educational Psychology 73: 326-334; June 1981.

Learning of the concept of equilateral triangle was facilitated by use of expository statements with examples and "interrogatives". (grade 4)

Thornton, Melvin C. and Fuller, Robert G. How Do College Students Solve Proportion Problems? Journal of Research in Science Teaching 18: 335-340; July 1981. [college]

Trueblood, Cecil R.; Szabo, Michael; and Nippes, Richard. A Survey of Preparation for Metric Changeover Among Supervisors of Science and Mathematics at the State Department of Education Level. School Science and Mathematics 81: 9-16; January 1981.

Few states have incorporated metrics into teacher certification, although preservice work includes the topic in most states. Other data indicate metric commitment and funding. (science and mathematics supervisors)

Turner, Nura D. Twenty Years Later: High School Students Who Showed Promise in Mathematics. American Mathematical Monthly 88: 432-435; June/July 1981. [secondary]

Uguroglu, Margaret E.; Schiller, Diane P.; and Walberg, Herbert J. A Multidimensional Motivation Instrument. Psychology in the Schools 18: 279-285; July 1981. [grades 3-8]

Vest, Floyd. College Students' Comprehension of Conjunction and Disjunction. Journal for Research in Mathematics Education 12: 212-219; May 1981.

On several subtests, performance was below chance level. "Non-negligible" proportions of the students consistently followed identified invalid inference patterns. (college)

Vest, Floyd; Nunley, B. G.; and Garner, M. V. The Effects of Large Class Procedures on Achievement and Attitude in a Mathematics Course for Prospective Elementary Teachers. School Science and Mathematics 81: 607-612; November 1981.

No significant differences in achievement or attitude were found between students in large or small classes. (elementary preservice)

Vukovich, Diane. Two-Year Versus Four-Year College Math Students: A Locus of Control Study. MATYC Journal 15: 16-18; Winter 1981.

No significant difference in locus of control was found between the two groups. (college)

Wade, Barbara E. Highly Anxious Pupils in Formal and Informal Primary Classrooms; The Relationship Between Inferred Coping Strategies and: I-Cognitive Attainment. British Journal of Educational Psychology 51: 39-49; February 1981. [primary]

Wagner, Sigrid. Conservation of Equation and Function Under Transformations of Variable. Journal for Research in Mathematics Education 12: 107-118; March 1981.

Less than half of 30 interviewed students gave conserving responses to any one of four tasks. (grades 5-12)

Watson, P. Personality and Arithmetic of Normal School Pupils and Boys in a Community Home with Education. British Journal of Educational Psychology 51: 394-397; November 1981. [ages 11, 12]

Webb, Noreen M. and Shavelson, Richard J. Multivariate Generalizability of General Educational Development Ratings. Journal of

Educational Measurement 18: 13-22; Spring 1981. [adult]

Weldon, David E.; Loewy, John H.; Winer, Janice I.; and Elkin, David J. Crowding and Classroom Learning. Journal of Experimental Education 49: 160-176; Spring 1981. [grades K-12]

Whetton, C. and Childs, R. The Effects of Item by Item Feedback Given During an Ability Test. British Journal of Educational Psychology 51: 336-346; November 1981. [ages 11, 12]

Wiebe, James H. The Use of Manipulative Materials in First Grade Mathematics: A Preliminary Investigation. School Science and Mathematics 81: 388-390; May/June 1981.

Expected use of many materials was significantly greater than observed use. (teachers in grade 1)

Wilkening, Friedrich. Integrating Velocity, Time, and Distance Information: A Developmental Study. Cognitive Psychology 31: 231-247; April 1981. [ages 5, 10, 17-34]

Williams, Robert T. Beneath the Surface of the Mathematics Teacher Shortage. Mathematics Teacher 74: 691-694; December 1981.

Data on the number of teachers certified and not certified to teach mathematics in North Carolina are included. (in-service teachers)

Willson, Victor L. and Stoller, Jane E. Predicting Teacher NTE Scores in Mathematics and Science. Educational and Psychological Measurement 41: 479-485; Summer 1981.

Number of semester hours' credit in mathematics and grade level of teaching accounted for 61 per cent of observed Mathematics NTE score variance. (secondary in-service teachers)

Wolf, Fredric M. and Blixt, Sonya L. A Cross-Sectional Cross-Lagged Panel Analysis of Mathematics Achievement and Attitudes: Implications for the Interpretation of the Direction of Predictive Validity. Educational and Psychological Measurement 41: 829-834; Fall 1981.

The data analysis "weakly suggested" that attitudes toward mathematics are causally predominant over mathematics achievement for their common variance. (grades 1-8)

Zepp, Raymond A. Relationships Between Mathematics Achievement and Various English Language Proficiencies. Educational Studies in Mathematics 12: 59-70; February 1981. [college]

Dissertation Abstracts

This final section of the listing contains 360 dissertations.

Abdelsamad, Omer Elfaroug Hamza. Improved Student Problem-Solving Procedure with the Calculator as Validated by Mathematics Experts. (University of Denver, 1980.) DAI 41A: 3462-3463; February 1981. [8101706]

The calculator was considered effective with 13 (of 60) problem-solving strategies. (secondary teachers)

Abo-Elkhair, Medhat El-Sayed Mahrous. An Investigation of the Effectiveness of Using Minicalculators to Teach the Basic Concepts of Average in the Upper Elementary Grades. (The Florida State University, 1980.) DAI 41A: 2980; January 1981. [8101953]

Significant differences favored the calculator group over the non-calculator group on a posttest, but not on retention or transfer tests. (grade 4)

Adams, James L. A Study of Achievement and Attitude Toward Mathematics in Remedial College Algebra. (The University of Nebraska-Lincoln, 1980.) DAI 41A: 2980; January 1981. [8100755]

A significant difference in algebra achievement favored the group given remedial instruction with a programmed text over those having a lecture-discussion method. (college)

Adams, Ronald C. A Study of the Effects of PSI and Lecture Teaching Methods upon Student Achievement and Attitude Change in College Mathematics. (Northern Arizona University, 1981.) DAI 42A: 519; August 1981. [8116927]

Students using PSI demonstrated greater achievement of algebraic skill than students having the lecture method, but no attitude difference was found. (college)

AlBabtain, Ibrahim Abdulwahab. A Survey of Mathematics Curriculum of Junior Colleges for Training of the Elementary Teacher in Saudi Arabia. (University of Wyoming, 1980.) DAI 41A: 5011; June 1981. [8111593] [elementary preservice (junior college)]

Albina, Melvis Ann. The Effects of Using Two Types of Calculating Devices on the Computational Skills of Selected Third and Fourth Grade Students. (The University of Akron, 1981.) DAI 42A: 1038; September 1981. [8117705]

No significant difference in achievement was found (at the .05 level) between groups using calculators, programmed feedback calculators, or no extra drill and practice. Calculator performance was superior at the .10 level. (grades 3, 4)

Allen, M. Carol. A Study to Determine the Congruence of the Planned and Experienced Curriculum in a K-12 School District in the State of Nebraska. (The University of Nebraska-Lincoln, 1980.) DAI 41A: 2905-2906; January 1981. [8101210] [grades K-12]

Al-Sarraf, Qasen Ali. Some Relationships Between Reflection-Impulsivity and Learning in Fourth Grade Boys in Kuwait. (University of Colorado at Boulder, 1980.) DAI 42A: 134-135; July 1981. [8113936] [grade 4]

Anderson, Betty Jean. A Survey of Metric Education in Seventh and Eighth Grade Science Classes in Four Large School Districts in Texas. (East Texas State University, 1981.) DAI 42A: 639; August 1981. [8116847] [teachers in grades 7, 8]

Angello, Nancy Bryan. An Analysis of Washington Teachers' Interest in Selected Priority Areas of In-Service Training. (Washington State University, 1980.) DAI 41A: 3535; February 1981. [8104121] [in-service teachers]

Arnold, Susan Hardee. A Comparison of Principals' Perceptions of Administration, Curriculum, Discipline, and Community Relations in Tennessee's Junior High and Middle Schools. (Memphis State University, 1981.) DAI 42A: 1927; November 1981. [8118724] [junior high and middle school]

Bailey, Freda Vail. The Effect of Teachers' Knowledge of Piaget's Theory of Cognitive Development on Their Teaching Behaviors and Pupil Achievement in Finding the Missing Addend. (State University of New York at Albany, 1981.) DAI 42A: 978; September 1981. [8118743]

No significant difference was found in scores of pupils whose teacher had or did not have a course on Piagetian theory. (pre-service teachers in grade 5)

Bass, Leon. A Comparison of Achievement and Attitudes of Black Male Students Attending Co-Educational and All Male Urban High Schools. (Temple University, 1981.) DAI 42A: 589; August 1981. [8115924] [grade 12]

Bastek, Carol Potyrala. The Effects of Teaching a Course in Group Theory Within a Secondary School Mathematics Curriculum. (Columbia University Teachers College, 1980.) DAI 41A: 4318-4319; April 1981. [8105854]

A six-week course in group theory was suitable for above-average students. (grades 10, 11)

Beasley, Nickie N. Relationship of Selected Variables to Student Achievement in the Transition from Elementary to Middle School. (The Florida State University, 1980.) DAI 41A: 4672; May 1981. [8108379] [grade 7]

Beattie, John Robert, Jr. Game Drill and Traditional Drill Activities in Mathematics with Learning Disabled and Educable Mentally Retarded Adolescents. (The University of Florida, 1981.) DAI 42A: 2605; December 1981. [8127412]

Games were significantly better than traditional drill activities for both achievement and on-task behavior of both groups studied. (adolescents)

Beavers, Harry James. The Relationship Between Selected Educational Variables and Student Achievement in a Selected School District. (East Texas State University, 1981.) DAI 42A: 2460; December 1981. [8127363] [grade 5]

Benbow, Lena Camilla Persson. Development of Superior Mathematical Ability During Adolescence. (The Johns Hopkins University, 1981.) DAI 42A: 1586; October 1981. [8120053]

SMPY students identified in grade 7 or 8 "reaffirmed their initial superiority" five years later by scoring an average of 200 points higher than college-bound 12th graders. (grades 7-12)

Bennett, Betsy Kraus. The Relationship Between Mathematics Anxiety and Number Pattern Recognition in Sixth Grade Students. (The American University, 1981.) DAI 42A: 2006; November 1981. [8124378]

Anxiety was not correlated with skills achievement and use of algebraic patterns. (grade 6)

Bennett, Kathleen Kieran Edwards. The Effects of Syntax and Verbal Mediation on Learning Disabled Students' Verbal Mathematical Problem Scores. (Northern Arizona University, 1981.) DAI 42A: 1093; September 1981. [8118857]

Normal students scored significantly higher than LD students on a problem-solving test. A verbal mediation program aided LD students. (secondary ?)

Benzwie, Teresa Ann Bender. Math: A Moving Experience. (Temple University, 1981.) DAI 42A: 1916; November 1981. [8124738]

A 30-minute film, designed to inspire appreciation and use of creative movement, is described. (grade K)

Bergan, Kathryn Suzanne. The Effects of Problem Exemplar Variations on Fraction Identification in Elementary School Children. (The University of Arizona, 1981.) DAI 42A: 135; July 1981. [8115068]

Performance on the denominator rule posttest was almost 12 times better for children taught with denominator rules than for those taught with one-element exemplars. (grades 1-4)

Berie, Janis L. Development of Numerosity Judgments: Attentional Preference and Use of Perceptual Cues in Estimation Processes. (The University of Iowa, 1981.) DAI 42B: 2093-2094; November 1981. [8123300]

Most subjects could be classified as using estimation processes predicted by one of several rule models. (grades 1, 5, 9, adults)

Berman, Barbara. An Investigation of the Efficacy of an Inservice Program Based on the Multiplier Effect on the Achievement of Elementary School Children. (Rutgers University The State University of New Jersey (New Brunswick), 1981.) DAI 42A: 175; July 1981. [8115175]

The program on the metric system was found to be effective. (elementary in-service)

Bienstock, Eric M. Initial Level of Learning, Retention, New Learning, and Self-Relearning of Basic Statistics. (New York University, 1980.) DAI 41A: 5011; June 1981. [8110699] [college]

Bierman, Susan Gale. Selected Intrapersonal Learning Variables as Possible Criteria for Choosing Instructional Methods to Increase Pupil Learning in Mathematics. (University of Southern California, 1981.) DAI 42A: 979; September 1981. [--]

Expository teaching was better than discovery learning or individually paced task sheets for acquiring facts and skills, especially for slower learners. (grades 3, 4)

Bigelow, C. Steven. Machine Tool Technology: A Task Analysis of the Physics and Mathematics Requirements. (Brigham Young University, 1981.) DAI 42A: 520; August 1981. [8117123]

The consensus was that mathematics is essential for a competent machinist, with level of mathematics depending on the nature of the task. (college, adult)

Black, Ruby Childers. The Effects of a Program of Student Contracting on the Self-Concepts of Intermediate-Level Educable Mentally Retarded Students. (Georgia State University-College of Education, 1981.) DAI 42A: 2605-2606; December 1981. [8126191]

Contracting increased posttest scores significantly. (intermediate, EMRs)

Bliss, Samuel Stephen. An Analysis of Attitudes Toward Selected Characteristics of Minimum Competency Programs in Mathematics as Perceived by Public School Educators in Kansas, Nebraska, Iowa, Colorado, and Missouri. (Kansas State University, 1980.) DAI 41A: 5011-5012; June 1981. [8111812]

Elementary and secondary teachers differed on only four of 21 items on attitudes toward minimum competency programs. Curriculum directors differed from supervisors on one item. (grades K-12)

Block, Cielle Fink. The Relationship Between Teacher-Student Cognitive Style Distance and Academic Achievement. (The Catholic University of America, 1981.) DAI 42A: 1388; October 1981. [8120148] [elementary ?]

Bockarie, Alex. The Effectiveness of a Unit in Teaching and Learning of Growth Relations in the Sixth and Seventh Grades. (Michigan State University, 1980.) DAI 41A: 3853-3854; March 1981. [8106355]

Success rates on the unit were 90%, area; 68%, volume; 67%, perimeter; 65%, surface area. (grades 6, 7)

Boehm, Suzan Katherine Abeles. Predicting Academic Achievement from a Kindergarten Screening Battery. (Yeshiva University, 1981.) DAI 42B: 1629-1630; October 1981. [8120086] [grades 1-4]

Bone, Mary Adams. A Comparison of Three Methods of Mathematics Placement for College Freshmen. (Michigan State University, 1981.) DAI 42A: 565; August 1981. [8117212]

The placement test was found to be useful for the given college; an ACT test was also satisfactory. Faculty members placed students at a higher level, but they were less likely to succeed. (college freshmen)

Bookman, Alan Bernard. The Effects of Preparation for Tests on Standardized Mathematics Achievement Test Growth. (The University of Connecticut, 1981.) DAI 42A: 920; September 1981. [8117594]

In grade 8, students who had the teacher lecture the previous year showed greater test growth; in grade 9, individualized instruction was favored. Students who had practice on test problems did better than those who discussed test importance or who had not prepared. (grades 8, 9)

Brantley, William Garry. Pupil Mobility and Academic Achievement. (University of Southern California, 1981.) DAI 42A: 2462-2463; December 1981. [--] [grade 6]

Brendzel, Sharon Decter. The Relationship Between Proportional Reasoning and Visual Spatial Ability. (Rutgers University The State University of New Jersey (New Brunswick), 1981.) DAI 42A: 1574; October 1981. [8120808] [grades 9, 11]

Brenner, Richard Alan. Elementary School Students' Abilities to Read and Solve Arithmetic Word Problems: A Study of Prerequisite Skills. (University of California, Los Angeles, 1981.) DAI 42A: 1947; November 1981. [8122805]

Ability to read and solve problems appeared to depend most on skills concerning vocabulary meaning, computation, and determining the correct operation. (grade 5)

Brewer, Jo Ann Pilcher. Relationship of Childrearing Practices to the Development of Logico-Mathematical Skills in Children Aged Five Through Eight. (Texas Tech University, 1980.) DAI 41A: 2929-2930; January 1981. [--] [ages 5-8]

Brewer, Kathleen Hoffman. A Study of the Effect of Problem Solving Instruction on the Student's Ability to Solve Mathematical Verbal Problems. (The Ohio State University, 1981.) DAI 42A: 1944; November 1981. [8121772]

Instruction based on Polya's model produced significantly higher scores on "devising a plan" than did a less-directed treatment. (grade 5)

Brewer, Sallie Brassell. A Comparison of the Mathematics Achievement and Self-Concept of Students Using Individualized Mathematics System with the Mathematics Achievement and Self-Concept of Students Using a Random Program. (University of Georgia, 1980.) DAI 41A: 4221-4222; April 1981. [8107895]

Students using the individualized program attained significantly

higher achievement and self-concept scores than those in a traditional program. (grades 1-4)

Briggs, George Wright. The Effects of Symmetry on "Same" - "Difference" Reaction Times, Similarity Judgments and Complexity Judgments. (New York University, 1980.) DAI 41B: 4715; June 1981. [8110719] [elementary ?]

Brodsky, Patricia Aline. A Construct Validation Study of Piaget's Equilibration Process. (The University of Manitoba (Canada), 1981.) DAI 42B: 1656; October 1981. [--] [nursery school, grade K]

Brown, William Henry, Jr. Elementary School Peer Tutoring in Mathematical Verbal Problem Solving. (Yeshiva University, 1981.) DAI 42A: 1457; October 1981. [8120087]

Significant achievement and attitude differences favored the group given tutoring and the group tutoring on problem solving. (grades 4, 6)

Brunson, Pansy Waycaster. The Relationship Between Achievement of Women in an All-Female Basic Algebra Class and the Achievement of Women in Mixed-Sex Classes. (Indiana University, 1980.) DAI 41A: 4251; April 1981. [8105978]

Women in the all-female class had significantly higher achievement scores than those in the mixed-sex class. (college)

Bryant, Carlyle Rupert. A Comparison of Two Arithmetic Programs on the Development of Basic Arithmetic Skills and Self Concept of Learning Disabled and Normal Sixth Grade Students. (University of South Carolina, 1980.) DAI 41A: 3522-3523; February 1981. [8102751]

An "experimental" program was found to be more successful with both learning-disabled and normal children than an "adopted" program. (grade 6)

Buchanan, Samual Paul. Mathematical Problem-Solving with and Without a Calculator and Its Effect on Alpha Activity. (The University of Texas at Austin, 1980.) DAI 41A: 2981; January 1981. [8100880]

A significant difference in alpha activity was found across brain hemispheres between mental computation and rest. (grades 11, 12)

Buerk, Dorothy Davis. Changing the Conception of Mathematical Knowledge in Intellectually Able, Math Avoidant Women. (State University of New York at Buffalo, 1981.) DAI 42A: 119-120; July 1981. [8113376]

Five women who shared mathematical experiences and perceptions showed "significant movement toward a relativistic conception of mathematical knowledge as well as a reduction of their mathematical apprehensiveness." (adults)

Burns, George William. The Interaction of Locus of Control with Method of Instruction and Its Effect on Performance in Elementary

Statistics. (Hofstra University, 1980.) DAI 42A: 180; July 1981. [8113907]

After mathematics reasoning had been accounted for, no interaction between locus of control and method of instruction was found. (two-year college)

Buschhoff, Frederick Maurice. The Effects of Attendance in a Diagnostic Teaching Center upon the Academic Achievement of Elementary School Children. (University of Northern Colorado, 1981.) DAI 42A: 168; July 1981. [8114097] [grades 2-6]

Butscher, Samuel Obediah. The Effect of Augmenting Beginning Algebra Word Problems with Perceptual Referents. (University of California, Berkeley, 1980.) DAI 41A: 2981; January 1981. [8029343]

Pictorial augmentation of problems did not make a difference in problem-solving performance for San Francisco students, but did aid students in Liberia. (grades 9-12)

Caldwell, Judith Ann. A Follow-Up Study of Public School Students in Regular Classes Following Placement in Special Classes for the Emotionally Disturbed. (The American University, 1981.) DAI 42A: 1094; September 1981. [8119548] [grades 2-12]

Campbell, Douglas Ross. "Going for the Answers" with Questions in a Philippine Elementary Mathematics Classroom. (Stanford University, 1981.) DAI 41A: 4630; May 1981. [8108900] [grades 4-6]

Caplan, Janet Stojak. Play-It-Safe: A New Motto and Model for Behavior in Syllogistic Reasoning Tasks. (City University of New York, 1981.) DAI 42B: 1200; September 1981. [8119648]

Sixth graders significantly preferred the unsafe interpretation for Venn diagrams, while adults preferred the safe interpretation. (grade 6, adults)

Carter, Jack Andrew, III. Perceptions of Problem Structure by Prospective Elementary School Teachers. (The University of Texas at Austin, 1980.) DAI 41A: 2981-2982; January 1981. [8100887]

Differences between three types of translations of problems were found: action-sequence, solution-oriented, and mathematically related. (preservice elementary teachers)

Casterlow, Gilbert, Jr. The Effects of Calculator Instruction on the Knowledge, Skills, and Attitudes of Prospective Elementary Mathematics Teachers. (The Pennsylvania State University, 1980.) DAI 41A: 4319; April 1981. [8107547]

The treatment in which students received teacher-guided instruction with the calculator was more effective than treatments without teacher guidance (preservice elementary teachers)

Chapman, Esther J. Stormont. Generative Learning of Word Problems in Mathematics. (University of California, Los Angeles, 1981.) DAI 42A: 120; July 1981. [8113826]

An original story generative approach to problem solving was more effective than a cue-circling generative approach. (grade 4)

Cheshire, Fred Duane. The Effect of Learning Computer Programming Skills on Developing Cognitive Abilities. (Arizona State University, 1981.) DAI 42A: 645; August 1981. [8117163]

No significant difference in problem-solving scores was found between computer programming and algebra classes. (grade 9)

Christensen, Larry Cleon. An Item Response Model in the Latent Trait Theory as a Predictor of Algebra Achievement. (Brigham Young University, 1981.) DAI 42A: 2028; November 1981. [8124778]

The latent trait model provided much more information about test items than did standard test statistics. (grade 9)

Clapp, Terry Lee. A Factor Analysis of the WISC-R and WRAT Subtest Scores of Learning-Disabled Youngsters. (United States International University, 1981.) DAI 41B: 3882; April 1981. [8107093] [grade 4 (mean)]

Clark, Julia V. Development of Seriation and Its Relation to the Achievement of Inferential Transitivity. (Rutgers University The State University of New Jersey (New Brunswick), 1980.) DAI 41A: 3973; March 1981. [8105210] [grades K-1]

Clayton, Constance Elaine. An Analysis of the Persistence of High Achievement Among Low Income Fourth Graders with Prekindergarten Experience. (University of Pennsylvania, 1981.) DAI 42A: 923; September 1981. [8117666]

No significant difference in mathematics scores was found between pupils having or not having prekindergarten experience. (grade 4)

Connor, Philip Joseph. A Calculator Dependent Trigonometry Program and Its Effect on Achievement in and Attitude Toward Mathematics of Eleventh and Twelfth Grade College Bound Students. (Temple University, 1981.) DAI 42A: 2545-2546; December 1981. [8124741]

No significant differences in achievement or attitude were found between calculator and non-calculator groups. (grades 11, 12)

Cook, Willie Clance. The Effects of Negative and Positive Instances in Teaching Mathematical Concepts to Freshmen at Florida A&M University. (The Florida State University, 1980.) DAI 41A: 4630; May 1981. [8108385]

Students receiving both positive and negative instances did significantly better on an algebra concepts test than those given only positive instances. (college freshmen)

Corn, Juliana. Mathematics Applications in Technology: Student Achievement and Attitude. (Yeshiva University, 1981.) DAI 42A: 1521-1522; October 1981. [8120088]

The groups taught with integrated materials scored significantly higher than those using traditional materials. (community college)

Corwin, Phoebe T. The Effect of Therapeutic Intervention on the Academic Performance of Low Achieving Neurologically Impaired High School Students. (Hofstra University, 1981.) DAI 42B: 2047-2048; November 1981. [8124305] [ages 15-21]

Counihan, Maxine Hocutt. Effects of Teacher-Student Matches on Interpersonal Maturity Levels upon Student Academic and Behavioral Learning. (The American University, 1981.) DAI 42A: 1094; September 1981. [8117552] [adolescents]

Counts, Alphonso. Achievement in Reading and Mathematics as Predictors of Achievement in Science. (University of South Carolina, 1980.) DAI 41A: 3340-3341; February 1981. [8102754] [grade 8]

Cuthbert, Lewis Coulter. An Investigation of the Relationships of Certain Student and Curriculum Variables in a Selected Comprehensive High School to Scholastic Aptitude Test Scores. (Temple University, 1981.) DAI 42A: 1870; November 1981. [8124744] [grade 12]

Czarnecki, Karen Gordon. Adult Performance on the Test of General Educational Development as a Function of Field Dependent-Independent Cognitive Style. (Rutgers University The State University of New Jersey (New Brunswick), 1980.) DAI 41A: 3836; March 1981. [8105212] [adults]

Daloisio, Tony Charles. An Analysis of the Relationship Between Cognitive Style and the Subject Area Specialization of Secondary Teachers in Connecticut. (The University of Connecticut, 1980.) DAI 41A: 3399; February 1981. [8103154] [secondary teachers]

David, Ronald Marshall. The Development and Delivery of Mathematics Service Courses at Two Year Colleges. (University of Maryland, 1980.) DAI 41A: 3463-3464; February 1981. [8103872]

A framework for examining the instructional effectiveness of mathematics service courses was presented. (two-year college)

Davis, Moira Keane. Pretraining and the Prediction of Achievement in Elementary Algebra for Chicano and Non-Chicano Students. (Stanford University, 1980.) DAI 41A: 3463; February 1981. [8103499]

The prognostic tests were reliable for both groups of students. Pretraining had no effect on test results. (grade 9)

Davis/Carney, Peggy Dean. A Study of the Use of Graph Paper for Arithmetic Computation. (Memphis State University, 1980.) DAI 41A: 5012; June 1981. [8109085]

No results were reported from this study on the use of plain or graph paper for doing practice work on computation. (grades 4-6)

Dean, David Keller. The Effectiveness of Using a Hand-Held Calculator as an Instructional Aid in Teaching the Basic Multiplication Facts to Fourth Graders. (Michigan State University, 1980.) DAI 41A: 3929; March 1981. [8106366]

No significant differences in achievement or retention were found between groups using calculators for all computation, or only for checking, or not using them at all. (grade 4)

deBronac-Meade, Marie-Louise Elisabeth. Reduction of Mathematics Anxiety: A Cognitive Behavior Modification Approach. (California School of Professional Psychology, 1980.) DAI 41B: 3174; February 1981. [8102482]

The modification treatment did not significantly reduce anxiety test scores. (secondary, college, ages 14-58)

Dees, Roberta Lea. Selected Piagetian Tasks and the Acquisition of the Fraction Concept in Remedial Students. (The University of Florida, 1980.) DAI 42A: 585; August 1981. [8115626]

Students who could conserve number performed better on the discrete model of fractions. In general, students scored low on both conservation and fractions tests. (grades 10-12)

Deitch, Irene M. Cognitive-Behavioral Treatment of Mathematics Anxiety in College Women. (Yeshiva University, 1981.) DAI 42B: 1584; October 1981. [8120090]

Groups given either systematic desensitization or cognitive restructuring significantly reduced mathematics anxiety. (college)

Dershimer, Elizabeth Lovejoy. A Study to Identify the Characteristics of Teachers Willing to Implement Computer-Based Instruction Using Microcomputers in the Classroom. (Memphis State University, 1980.) DAI 41A: 3343; February 1981. [8101783] [grades K-12]

Dershimer, Wilbur Presley, Jr. The Development and Evaluation of an Interactive Computer Program Used as an Instructional Aid in Teaching Basic Flowcharting Techniques. (Nova University, 1979.) DAI 41A: 3399; February 1981. [8104503] [community college]

DeWolf, Virginia Anne. Confirmatory Causal Modeling with Latent Quantitative Variables and High School Mathematics Coursework: Impact of Gender. (University of Washington, 1980.) DAI 41A: 3007-3008; January 1981. [8029747]

No direct impact of gender on pre-college quantitative ability was found; rather, it had an indirect impact through coursework preparation. (grade 12)

Dillon, Michael Joseph. A Descriptive Study of Teacher Utilization of Mathematics Objectives Checklists. (The Pennsylvania State University, 1980.) DAI 41A: 4215-4216; April 1981. [8107557]

The typical teacher used the checklists once a year, to record test results, because they were required to do so. (elementary in-service)

Dimas, William A. The Relative Effectiveness of the Title VII Bilingual Program and Regular Mainstream Program in Trenton as Revealed by the Students' Grade Point Averages (GPA), Attendance Records and Drop-Out Rates. (Rutgers University The State University of New

Jersey (New Brunswick), 1981.) DAI 42A: 68-69; July 1981. [8115178] [grades 7-12]

Diodato, Virgil Pasquale. Author Indexing in Mathematics. (University of Illinois at Urbana-Champaign, 1981.) DAI 42A: 2340-2341; December 1981. [8127581] [college]

Doherty, Michael A. Effects of Reinforcement and Motivational Orientation on Children's Academic Behavior as a Function of Self-Determined and Externally Imposed Contingencies. (Temple University, 1981.) DAI 42A: 2069; November 1981. [8124562] [grade 3]

Doody, William John. Cognitive Correlates of Sex Related Differences in Spatial Ability. (Syracuse University, 1980.) DAI 41A: 3033-3034; January 1981. [8026398] [grade 10]

Dooley, Alfred Roberts. Effects of a Mathematics Facilitation Program upon Sex Role Identification and Attitudes Toward Mathematics. (Texas Tech University, 1981.) DAI 42A: 1546; October 1981. [8121884]

None of four treatments produced group differences. (college)

Dowshen, Arlene Gilda Lucker. A Critical Analysis of Research on Problem Solving in Secondary School Mathematics, 1925-1975. (Temple University, 1981.) DAI 42A: 585; August 1981. [8115936]

Twelve trends or generalizations were identified, in addition to answers to ten questions. (grades 7-12)

Doyle, Delores Marie. A Comparative Study of Third Grade Pupils' Achievement Test Scores on the 1953, 1964, and 1973 Editions of the Stanford Achievement Test. (George Peabody College for Teachers of Vanderbilt University, 1980.) DAI 41A: 4000; March 1981. [8105454] [grade 3]

Doyle, William Howard. Using an Advance Organizer to Anchor a Subsuming Function Concept to Facilitate Learning, Transfer, and Retention in Remedial College Mathematics. (The Ohio State University, 1981.) DAI 42A: 2006; November 1981. [8121785]

It was concluded that an advance organizer could anchor concepts of functions. (college)

Drapac, Gloria Lynne Waite. Development of Manipulative Materials for Elementary Algebra for College Students and Evaluation of Their Effect on Achievement, Attitude Toward Mathematics, and Math Anxiety. (The University of Iowa, 1980.) DAI 42A: 120-121; July 1981. [8114251]

The manipulative approach (using Mathtiles) had favorable effects on both achievement and attitudes. (college)

Duke, Richard Gary. A Programmed Metrics Text for Intermediate Grades: An Integrated Instructional Approach Stressing the Interrelationships Among Metric Units. (Brigham Young University, 1981.) DAI 42A: 1458; October 1981. [8117129]

No significant difference in achievement was found between use of the programmed text or the regular textbook. (grades 4, 5)

Duncan, Ruth Kruger. The Effects of Two Instructional Treatments on Increasing Computational Skill in Subtraction with Regrouping of Grade Three Students. (Indiana State University, 1980.) DAI 41A: 3876; March 1981. [8105540]

No significant difference was found between groups taught using base-blocks or expanded notation. (grade 3)

Duren, Phillip Edward. Teaching Reconstruction Memory Strategies to Seventh Grade Students in a Problem Solving Setting. (The Ohio State University, 1980.) DAI 41A: 2982; January 1981. [8100143]

Students used reconstruction strategies significantly more often if the rules were taught in an inductive or deductive style rather than in a rule/example style. (grade 7)

Dygert, Catherine Weber. The Effects of a Human Relations Program on Self Concept and Achievement of Eighth Grade Rural Students. (The Ohio State University, 1980.) DAI 41A: 4978; June 1981. [8107318] [grade 8]

Dykes, Isaac Jerald. Prediction of Success in College Algebra at Copiah-Lincoln Junior College. (The University of Mississippi, 1980.) DAI 41A: 4630-4631; May 1981. [8108757]

Only a limited amount of variance was explained by the predictor variables studied; GPA in high school mathematics was the best predictor of success in college mathematics. (grade 13, junior college)

Edenhardt-Pepe, Michael. Activity Structure and Student Learning Engagement in Elementary School Classrooms. (Washington University, 1981.) DAI 42A: 1458-1459; October 1981. [8122734] [elementary]

Eldersveld, Paul John. The Relationship of Field Dependence-Independence, Student Perceptions, and Mathematics Preparation to Success and Failure in Developmental Mathematics at Selected Community Colleges in Northern Illinois. (Northern Illinois University, 1980.) DAI 42A: 517; August 1981. [8111698]

Variables affecting success were identified for those taught by traditional pacing or self-pacing. (community college)

Elliot, Ligia Gomes. Framework for Supporting Curriculum Integration of Science and Math in Rio de Janeiro. (University of California, Los Angeles, 1980.) DAI 42A: 69; July 1981. [8113842] [elementary]

Elliott, James William. The Effect of Using Hand-Held Calculators on Verbal Problem Solving Ability of Sixth-Grade Students. (University of Oregon, 1980.) DAI 41A: 3464; February 1981. [8101829]

No significant difference was found between groups using calculators or paper and pencil on problems. (grade 6)

Engelhardt, John Joseph. The Effects of Systematic Instruction in Verbal Problem Solving on the Achievement of Sixth-Grade Students. (University of Missouri-Columbia, 1980.) DAI 42A: 585-586; August 1981. [8117424]

No significant difference was found in problem-solving scores between a group taught by a systematic approach to problem solving and a control group. An attitude measure favored the control group. (grade 6)

Enyeart, Morris Allen. Relationships Among Propositional Logic, Analogical Reasoning, and Piagetian Level. (Rutgers University The State University of New Jersey (New Brunswick), 1980.) DAI 41A: 3974; March 1981. [8105215] [college]

Evans, Richard Charles. An Illuminative Evaluation of Inservice Education Programs in New Hampshire. (The University of Wisconsin-Madison, 1980.) DAI 42A: 121; July 1981. [8110069]

Elementary teachers were generally satisfied with staff development programs, while middle school and secondary teachers were generally dissatisfied. (elementary and secondary in-service)

Everett, Eunice Fleming. Effectiveness of the Use of Behavioral Objectives with and Without Student Self-Evaluation Tests in the Teaching of Intermediate Algebra at the Community College. (Florida Atlantic University, 1980.) DAI 41A: 3929; March 1981. [8105313]

Use of behavioral objectives did not significantly affect achievement in lecture-taught classes. Self-evaluation testing had a negative effect on achievement. (community college)

Feghali, Issa Nehme. The Relationship Between Volume Conservation and a Volume Algorithm for a Rectangular Parallelepiped. (The University of British Columbia (Canada), 1980.) DAI 41A: 5012; June 1981. [--]

Students having instruction on volume resembling that in textbooks were able to apply the volume algorithm regardless of their level of conservation. (grade 6)

Ferguson, David Lawrence. The Language of Mathematics: How Calculus Students Cope with It. (University of California, Berkeley, 1980.) DAI 42A: 121; July 1981. [8113028]

No significant effect was detected of "local reading" instruction on ability to solve calculus word problems. (college)

Findley, James Eldon. A Comparison of Student Performance Under Traditional Graduation Requirements and Minimum Competency Requirements. (The University of Nebraska-Lincoln, 1981.) DAI 42A: 1459-1460; October 1981. [8122592] [grade 12]

Ford, Janet Ann. Factors Relating to the Use of a Mathematical Tool: The Japanese Soroban. (The University of Southern California, 1981.) DAI 42A: 981; September 1981. [--]

A significant but moderate relationship was found between mathematics achievement and ability to use the soroban. (ages 6-11)

Ford, Karyn Marie. The Effect of Team Teaching upon Achievement in and Attitude Toward Mathematics and English. (Michigan State University, 1981.) DAI 42A: 982; September 1981. [8117231]

No significant difference in mathematics scores was found between students taught by team teaching or "traditional" approaches. (grade 9)

Ford, Mary Elizabeth. Children's Understanding of Probability. (The University of Iowa, 1980.) DAI 42A: 139; July 1981. [8114252] [grades K, 3, 5, 7, 10]

Freeman, Vera Eiler. Relationships Between School District Level Inputs and the Output Performance of Eighth Graders on the Missouri Basic Essential Skills Test. (University of Missouri-Columbia, 1980.) DAI 41A: 4556-4557; May 1981. [8108796] [grade 8]

Friederwitzer, Fredda Joy. The Development, Implementation, and Evaluation of a Model Inservice Program in the Teaching of Measurement Concepts to Third and Fifth/Sixth Grade Elementary School Teachers. (Rutgers University The State University of New Jersey (New Brunswick), 1981.) DAI 42A: 176; July 1981. [8115180]

Teachers gained metric knowledge from four one-day workshops and reported using an activity approach more frequently. (teachers in grades 3, 5, 6)

Fulbright, Martha Yeatts Scruggs. Cognitive Style as Indicated by Self-Report, Physiological, and Performance Representations of Hemisphericity. (Texas A&M University, 1980.) DAI 41A: 4335-4336; April 1981. [8108010] [grade 12]

Fullen, Herman Brooks, Jr. A Comparison of Two Approaches in Teaching Mathematics to Special Education Students. (The Louisiana State University and Agricultural and Mechanical College, 1981.) DAI 42A: 2610; December 1981. [8126958]

Diagnostic-prescriptive materials were found to be more effective than programmed materials. (secondary)

Furuto, David Masaru. A Study of Affective Variables and Performance in Mathematics: The Effects of Systematic Counseling upon Student Self-Concept, Anxiety, Attitude, and Achievement. (Brigham Young University, 1981.) DAI 42A: 2546; December 1981. [8126332]

Systematic counseling was found to be effective. (two-year college)

Futterman, Robert. A Causal Analysis of Expectancies and Values Concerning Mathematics. (The University of Michigan, 1980.) DAI 41B: 3628; March 1981. [8106139]

Ability was found to play an important causal role in the attitudinal process. (grades 5-11)

Galvao, Vilma Pereira. Mathematical Problem Solving: A Conceptual

Framework for Use in Teacher Preparation in the State of Rio de Janeiro, Brazil. (University of California, Los Angeles, 1980.) DAI 41A: 5004; June 1981. [8111222] [elementary preservice]

Garabedian, Charles, Jr. The Effects of Proof on Achievement and Reasoning Ability of Students in Geometry. (The University of Connecticut, 1981.) DAI 42A: 586; August 1981. [8116732]

The amount of proof required for geometry students (less than 50% or more than 80%) had no significant effect on geometry achievement or on reasoning ability. (grades 10, 11)

Garrett, Donald Mitchell. The Impact of School Building Age on the Academic Achievement of Selected Eleventh Grade Pupils in the State of Georgia. (University of Georgia, 1980.) DAI 41A: 4231; April 1981. [8107912] [grade 11]

Gignac, Leonard Joseph. Observation of Learning Style as a Means of Identifying and Treating Learning Failure in Young Children. (University of Windsor (Canada), 1980.) DAI 41B: 2790; January 1981. [--] [grades K, 1]

Giuli, Charles Anthony. The Relation Between Attributions and Mathematics Achievement in the Elementary School: A Two-Year Study. (University of Hawaii, 1981.) DAI 42A: 2098; November 1981. [--]

No significant differences in achievement or attitude were found between groups given or not given a specially selected mathematics program. (grades 3-6)

Goldsmith, Diane Bradford. An Attributional Approach to Gender Differences in Mathematical Achievement. (The University of Utah, 1980.) DAI 41A: 4631; May 1981. [8109568]

Students' attributions of their own mathematical achievement did affect eventual achievement, but previous performance, age, and self-expectancies exerted far more influence. (college)

Gomez, Consuelo Tukay. Cultural Identity and Academic Achievement: The Development of a Cultural Identity Index for Filipino-American Students. (University of San Francisco, 1981.) DAI 42A: 1548; October 1981. [8121624] [grade 5]

Goodall, Charles Gayle. The Reduction of Mathematics Anxiety Utilizing Relaxation and Desensitization and the Presentation of Practical Examples. (University of South Florida, 1980.) DAI 41A: 5012-5013; June 1981. [8108260]

Relaxation-desensitization alone was more effective than when used with practical examples for reducing anxiety. (junior college)

Goodwin, Paul Raymond. A Study to Examine the Effect of Curriculum Materials on the Ability of General Mathematics Students to Solve Verbal Problems. (University of Nevada, Las Vegas, 1980.) DAI 42A: 121-122; July 1981. [8114203]

The developed curriculum materials seemed effective in promoting problem-solving skills. (grade 9)

Gore, Dolores A. Sex-Related Differences in Relation to Teacher Behavior as Wait-Time During Fourth-Grade Mathematics Instruction. (University of Arkansas, 1981.) DAI 42A: 2546; December 1981. [8127292]

Both teacher wait-time and incidences of being called on by the teacher favored boys. (grade 4)

Goth, Patricia Ellen. The Development of Addition-Subtraction Knowledge and Its Relation to Conservation in Young Elementary School Children. (The University of Texas at Austin, 1980.) DAI 41B: 2791; January 1981. [8100907] [grades K-2]

Graw, Ethel Esther. A Study of the Effects of Team Teaching on Student Academic Achievement, Attitudes and Self Concept. (University of Colorado at Boulder, 1980.) DAI 41A: 3349; February 1981. [8103098] [grades 1-3]

Greenberg, Robert Neil. Fluid and Crystallized Intelligence, Age, Socioeconomic Status, and Mathematics Achievement of Children with Special Learning and Behavior Problems. (New York University, 1980.) DAI 41B: 4717; June 1981. [8110660]

Fluid and crystallized intelligence were effective predictors of achievement for younger but not older children. (ages 7-17)

Greenwood, Jonathan Jack. The Effects of Student-Conducted Error Analysis on Teacher Practices and Student Performance. (University of Oregon, 1981.) DAI 42A: 2006-2007; November 1981. [8123491]

No significant differences were found between four teaching practices or pupil achievement. (teachers in grade 5)

Gullatt, David Elmer. Effects of Matching-Mismatching Field-Dependent-Independent Teachers and Students on Student Achievement and Evaluation of Teacher Attributes. (University of Kansas, 1980.) DAI 42A: 525-526; August 1981. [8115745]

No differences in mathematics achievement were found when students were matched with teachers on field-dependence-independence or sex. (teachers in grades 9, 10)

Guthrie, Judith Blume. A Study of Mathematics Education in the United States: Enrollment, Abilities, and Post High School Paths. (Claremont Graduate School, 1980.) DAI 41A: 3464; February 1981. [8103805]

Significant differences in enrollment, ability, and post-secondary school paths were found. Students tended to study little mathematics; males take more mathematics courses than do females. (secondary)

Guthrie, Karen Holbrook. Kindergarteners' Explanations of More and Less: How Can Number Conservation Be Counted On? (The University of Toledo, 1981.) DAI 42A: 1549; October 1981. [8121653] [grade K]

Hack, Raymond John. A Longitudinal and Cross-Sectional Study of the

Reading and Mathematics Achievement of Early and Delayed School Entrants. (Northern Illinois University, 1980.) DAI 41A: 4907-4908; June 1981. [8111563] [grades 1, 3, 5, 8]

Hall, Julia Clarissa. Factors Related to Competency Test Performance for North Carolina's Learning Disabled High School Students. (The University of North Carolina at Chapel Hill, 1981.) DAI 42A: 2611; December 1981. [8125588] [secondary]

Harkins, Ronald Joseph. The Effect of Mode of Presentation on Attitudes Toward and Achievement in Mathematics. (Indiana University, 1980.) DAI 41A: 3930; March 1981. [8029225]

The individualized tutorial format was more effective for low-anxiety students, while the lecture mode was more effective for high-anxiety students in remedial algebra. (college)

Harre, Ruthanne. An Investigation of the Interactive Effects Among Student Types and Treatment Types on Time-on-Task Behavior in Eighth Grade Mathematics Classes. (University of Missouri-Columbia, 1980.) DAI 41A: 4631-4632; May 1981. [8108801]

The on-task behavior of different types of students varied across instructional programs and across phases of the lesson. (grade 8)

Harris, Rubie J. Relationship of Counseling Factors to Minority Females' Participation in Mathematics and Science. (The University of Wisconsin-Madison, 1980.) DAI 42A: 87; July 1981. [8110076]

Encouraging black females to enroll in mathematics and science courses appeared effective. (secondary)

Hastings, Dorthy M. H. Effects of Self Contained, Independent Learning Plan and Integrated Education Programs on Achievement in Reading and Math for Punjabi-English K-3 Bilingual Students. (University of the Pacific, 1981.) DAI 42A: 2012-2013; November 1981. [8123872] [grades K-3]

Hayes, Joseph Edward. A Comparison of Minimum Competency Testing Programs in Five Selected Illinois Public School Districts. (Southern Illinois University at Carbondale, 1980.) DAI 41A: 3350-3351; February 1981. [8102377] [grades K-12]

Hazelton, Alexander Edward. A Study of the Validity of Student Ratings of College Teaching Assessed on a Criterion of Student Achievement in a First Course in Calculus. (The University of Florida, 1980.) DAI 41A: 3901; March 1981. [8105581]

Significant but weak relationships were found between student ratings and both instructor and classroom variables. (college)

Hecht, James Erich. Using the Monte Carlo Method to Teach Probabilistic Problem Solving to Ninth Grade General Mathematics Students. (University of Illinois at Urbana-Champaign, 1980.) DAI 41A: 4632; May 1981. [8108535]

The unit on probability was effectively used with low achievers. (grade 9)

Helm, Estelle Bailey. Piagetian Conservation Tasks as Predictors of First Grade Achievement in Reading and Mathematics. (Memphis State University, 1980.) DAI 41A: 2912; January 1981. [8101792] [grade 1]

Helm, Finley. Covariation of Cognitive Preference with Instructional Mode and Classroom Reward Structure. (University of Kentucky, 1980.) DAI 41A: 3489; February 1981. [8104466]

Socioeconomic background, health status, and prior mathematical experience are significantly related to cognitive preference in remedial mathematics students. (college)

Hempel, Judith Ann. The Effect of Prior Knowledge, Piagetian Level, Attitude, Sex, and Teaching Format on Achievement, Retention, and Transfer in Informal Elementary Geometry. (University of Houston, 1980.) DAI 41A: 3930; March 1981. [8105365]

The deductive group achieved at a significantly higher level than the guided discovery group. (elementary)

Hetzel, Michael Charles. A System for the Remediation of Student Subtraction Errors. (Brigham Young University, 1981.) DAI 42A: 983; September 1981. [8118969]

Of those tutored for 40 minutes, 81 per cent showed no recurring consistent errors two days later. (grades 3, 4, 6)

Hildreth, David John. Estimation Strategy Uses in Length and Area Measurement Tasks by Fifth and Seventh Grade Students. (The Ohio State University, 1980.) DAI 41A: 4319-4320; April 1981. [8107340]

Estimation ability and strategy use were correlated with perceptual ability. They were related to mathematical ability for the college students and unrelated for students in grades 5 and 7. (grades 5, 7, college)

Hirmanpour, Iraj. A Computerized Model for Placement and Diagnostic Testing in College Remedial Mathematics. (Florida Atlantic University, 1980.) DAI 41A: 4687; May 1981. [8109304]

A set of computer programs was developed to implement a task analysis model of diagnosis for any subject where hierarchical relationships can be defined. (college)

Hoffman, Gilbert Lee. Pupil-Teacher Ratios and Academic Performance: An Experimental Analysis. (University of Kansas, 1980.) DAI 41A: 2931; January 1981. [8102015] [grades K-3]

Holland, Locke, Jr. Operational Levels of Cognitive Stage Achievement and Representations of Cognitive Structures Used in Mathematical Problem Solving by Young Adult Prospective Teachers. (The University of North Carolina at Greensboro, 1980.) DAI 41B: 3208; February 1981. [8101505]

Only 27 per cent of the students achieved consolidated formal operations. Cognitive stage and problem-solving success were not

independently related. (college)

Horany, Ernest Edward. The Effects of Chisanbop on the Mathematics Achievement of Selected Elementary School Students. (North Texas State University, 1980.) DAI 41A: 4632; May 1981. [8109355]

The Chisanbop technique made a significant difference in mathematics performance in grade 2, but not grade 3. (grades 2, 3)

Huang, Chein-Hsiang. A Study of an Urban School District's Students' Mathematics Achievement Compared with NAEP Results and a Comparison of the Mathematics Objectives of NAEP with the Georgia Criterion Referenced Test. (Auburn University, 1981.) DAI 42A: 1522; October 1981. [8114921]

The NAEP group scored higher than the local group tested on the same objectives. (age 13)

Humphrey, Jackie Marie Hance. Persistent Error Patterns on Whole Number Computations and Scores on Piagetian Tasks as They Relate to Mathematics Achievement of Adolescents. (The University of Texas at Austin, 1981.) DAI 42A: 1038; September 1981. [8119307]

No significant difference in performance on Piagetian tasks was found between students who did or did not make persistent computational errors. (grade 9)

Hunting, Robert Paul. The Role of Discrete Quantity Partition Knowledge in the Child's Construction of Fractional Number. (University of Georgia, 1980.) DAI 41A: 4320; April 1981. [8107919]

Children able to think about fractions in terms of flexible units or multiples of such units exhibited superior solutions to fraction problems. (grades 4, 6)

Isaacson, Dan. Discovering the Microcomputer as an Instructional Media Tool in Teaching: (A Laboratory for Elementary and Secondary Educators). (University of Oregon, 1980.) DAI 41A: 3536; February 1981. [8101839] [elementary and secondary teachers]

Israel, Michael. A Meta-Analysis of the Los Angeles Unified School District's Efforts in Achieving Its Goals of Desegregation: Improved Academic Achievement and Race Relations. (University of Southern California, 1981.) DAI 41A: 4651-4652; May 1981. [--] [elementary, junior high]

Jackson, Leslie Cecilia. The Effect of Desegregation and Achievement Motivation on Academic Achievement Levels of Black High School Students. (California School of Professional Psychology, Los Angeles, 1981.) DAI 42B: 2600; December 1981. [8124382] [grade 12]

Jackson, Michael Bee. The Effect of Vocabulary-Oriented Mathematics Instruction on Learning of Seventh Grade Pre-Algebra Mathematics. (University of South Florida, 1981.) DAI 42A: 1462; October 1981. [8120667]

The group given vocabulary activities scored significantly higher than the control group. (grade 7)

Jacobson, Kerry Ray. The Relationship of Individual Student Time Allocation to Reading and Mathematics Achievement. (The University of Wisconsin-Madison, 1980.) DAI 42A: 35-36; July 1981. [8107839]

Students with greater amounts of allocated time had significantly greater achievement gains in mathematics. (grade 3)

Johnson, Daphne Evadne. A Study of One-, Two-, and Three-Dimensional Linear Patterns, Sex, and Hemispheric Lateral Organization Among Young Jamaican Children. (The University of Connecticut, 1980.) DAI 41A: 3416; February 1981. [8103183] [grade 3]

Johnson, Jerry Lee. A Study of Hypothesis Testing Behavior Within the Context of Mathematical Problem Solving. (University of Washington, 1981.) DAI 42A: 2546-2547; December 1981. [8126115]

Both groups were strongly systematic in hypothesis testing, with higher-ability students more systematic, successful, and consistent than lower-ability students and significantly more efficient in using strategies. (grade 9)

Johnson, John, II. Effectiveness of a Parental Tutorial Program on Mathematics Achievement and Self-Concept Scores of Black Inner-City Students. (University of Miami, 1981.) DAI 42A: 1462; October 1981. [8121133]

Parent tutoring with learning activity packets significantly increased achievement, but not self-concept. (grade 3)

Jones, Lois Harrison. An Investigation of the Relationships Between Self-Concept and Academic Achievement of Pre-Middle School Students. (Virginia Polytechnic Institute and State University, 1980.) DAI 42A: 1948; November 1981. [8121501] [pre-middle school]

Jorgensen, Patrick Richard. A Survey of Remedial/Developmental Mathematics Programs at Two-Year Public Colleges. (Wayne State University, 1981.) DAI 42A: 973; September 1981. [8117072]

Twelve recommendations about tests and programs were made. (two-year college)

Junkin, Adele Crawford. An Analysis of Consistent Errors in the Addition of Fractions. (The University of Texas at Austin, 1981.) DAI 42A: 984-985; September 1981. [8119312]

Errors and thought processes used by 28 students were identified. (grade 9)

Kanagy, Max Earl. The Effectiveness of Piagetian Spatial Representation and Selected Other Tasks as Multiview Drawing Aptitude Tests. (The Ohio State University, 1980.) DAI 41A: 2972-2973; January 1981. [8100176] [grade 8]

Kasten, Margaret Bledsue. Minimum Competency Testing in Mathematics: A Chronicle of an Educational Movement of the 70s. (The Ohio State University, 1981.) DAI 42A: 2007; November 1981. [8121809]

Background on the goals, definitions, mandates, implementation, and

impact of minimum competency testing is given. Surveys of teachers in four states indicated their reactions. (teachers in grades K-12)

Kaufman, Sherwin. The Comparison Between the Utilization of Behavioral Objectives in the Teaching of the Mathematics of Merchandising in the Distributive Education Curriculum and Traditional Teaching. (Temple University, 1980.) DAI 42A: 676-677; August 1981. [8115945] [secondary ?]

Kenison, Paul Edson. A Comparison of Logical Interpretation with Various Types of Content. (The Florida State University, 1981.) DAI 42A: 2547; December 1981. [8125830]

Students had great difficulty in recognizing logically equivalent statements presented verbally. (college)

Kennedy, Madeleine Maria. The Effects of Learner Expectation, Number Anxiety, and Instructional Focus on the Learning of a Statistical Concept. (Indiana University, 1980.) DAI 41A: 5069; June 1981. [8112491]

No significant correlation was found between number anxiety and learning outcome for students given differing expectations. (college)

Kim, Byong Sung. Teachers' Instructional Climate, Mastery Model Strategy and Student Achievement at Different Grade Levels. (Michigan State University, 1980.) DAI 41A: 2838; January 1981. [8101126] [elementary teachers]

Klagholz, Patricia Bronczyk. An Investigation of Achievement in a Title I Mathematics Program at Grades 11 and 12. (Temple University, 1981.) DAI 42A: 586; August 1981. [8115947]

Students in the Title I program scored significantly higher than those in a comparison group. (grades 11, 12)

Knight, Douglas Hugh. The Effects of Transfer Materials on the Critical Thinking Abilities of Second-Year Algebra Students. (Wayne State University, 1980.) DAI 41A: 4632-4633; May 1981. [8107220]

No significant difference was found between students who used or did not use transfer materials. (grade 11)

Knight, Jane Eveland. An Empirical Test of Achievement Motivation Training for Junior High School Students. (Northwestern University, 1981.) DAI 42A: 2033; November 1981. [8124928] [grade 7]

Koelle, William Harry. The Effects of Locus of Control and Self-Concept on Academic Achievement in Deaf Adolescents Using Instrumentation Modified for Deaf Subjects. (The Catholic University of America, 1981.) DAI 42A: 2033-2034; November 1981. [8120753] [adolescents]

Konsin, Mary Ann C. Spatial Visualization and Mathematical Problem Solving. (The University of Wisconsin-Madison, 1980.) DAI 41A: 3930-3931; March 1981. [8023417]

Level of spatial skill was not reflected in methods of solving problems, although some differences were noted for those high in spatial skill. (grades 6, 7)

Kopp, Katherine Harris. Effects of a Systematic Planning Technique on the Mathematical Computation Performance of Mildly Handicapped Learners. (George Peabody College for Teachers of Vanderbilt University, 1980.) DAI 41A: 3986; March 1981. [8105515]

The planning technique was found to be effective. (elementary ?)

Korzeniowski, Monica Ann. Effects of Verbal Self-Instruction Training on Arithmetic Performance of Children with Special Education Needs. (California School of Professional Psychology, Los Angeles, 1980.) DAI 42B: 1204; September 1981. [8114760]

Verbal self-instruction training produced improvement in problem solving, but was not significantly different from the effect of cognitive strategies training. (elementary)

Kress, Herbert Edward. An Investigation of the Effect upon the Musical Achievement and Musical Performance of Beginning Band Students Exposed to Method Books Reflecting Piaget's Theory of Conservation. (University of Colorado at Boulder, 1981.) DAI 42A: 1528-1529; October 1981. [8122299] [grade 4]

Krist, Betty Jane. The Programmable Calculator in Senior High School: A Didactical Analysis. (State University of New York at Buffalo, 1980.) DAI 41A: 2982; January 1981. [8102564]

How a class used calculators with a specially designed curriculum over a two-year period was studied. (grades 11, 12)

Kuhlman, Cynthia. A Procedure to Facilitate Generalization of Academic Performance from Resource Rooms to Regular Classrooms. (Georgia State University-College of Education, 1980.) DAI 41A: 3987; March 1981. [8106830] [elementary]

Kuhs, Therese M. Elementary School Teachers' Conceptions of Mathematics Content and the Potential Effect on Classroom Instruction. (Michigan State University, 1980.) DAI 41A: 5013; June 1981. [8112108]

Teachers were primarily concerned with teaching content related to the four operations. Perceptions of specific topics varied, so variation in content may result. (teachers in grades 3-5)

Lane, David Seffers, Jr. Designing Instruction to Facilitate Conditional Reasoning Performance in Preadolescent Children. (The Florida State University, 1980.) DAI 41A: 4654; May 1981. [8108398] [age 11]

Laseter, Jesse Claude. An Investigation into the Effect of Teacher Effectiveness Training upon Student Achievement in Reading and Mathematics. (Georgia State University-College of Education, 1981.) DAI 42A: 937; September 1981. [8120124] [grades 7, 8]

Lasoff, Edward Marvin. The Effects of Feedback in Both Computer-Assisted Instruction and Programmed Instruction on Achievement and Attitude. (University of Miami, 1981.) DAI 42A: 1553; October 1981. [8121115] [college]

Lavizzo, Nancy Iles. An Investigation of the Relationship Among Birth Order, Intelligence, Sex, Biorhythm and Academic Achievement. (Loyola University of Chicago, 1981.) DAI 41A: 4654; May 1981. [8107077] [elementary]

LeMahieu, Bethene June Ohm. Talented and Gifted Programs in New Jersey: An Analysis of Status and Aspirations. (Rutgers University The State University of New Jersey (New Brunswick), 1981.) DAI 42A: 1408; October 1981. [8120834] [elementary]

Leslie, Helen Louise. The Effects of Alternate Day Scheduling and Daily Scheduling on the Achievement Scores of Seventh Grade Title I Mathematics Students as Measured by the Comprehensive Tests of Basic Skills. (George Peabody College for Teachers of Vanderbilt University, 1980.) DAI 41A: 3809-3810; March 1981. [8105488]

Scheduling arrangement did not affect achievement. (grade 7)

Levine, Deborah Ruth. Computational Estimation, Ability and the Use of Estimation Strategies Among College Students. (New York University, 1980.) DAI 41A: 5013; June 1981. [8110705]

Estimation appeared to be difficult, especially for students of low quantitative ability. Nine types of difficulties were identified. (college)

Levy, William Kaufman. WISC-R Arithmetic Subtest Performance of Mathematically Handicapped and Non-Handicapped Learning Disabled Students as a Function of Presentation/Response Behaviors and Vocabulary Interactions. (The University of Connecticut, 1981.) DAI 42A: 1553; October 1981. [8122357]

The WISC was able to identify the mathematically learning disabled group. (age 12)

Lopez, Salvador, Jr. The Adaptation of Culturally Different Children to the Culture of the School and Bilingual/Bicultural Education. (The University of Michigan, 1981.) DAI 42A: 589; August 1981. [8116289] [grades 1, 2]

Lowery, Charles Shelby. The Effect of Piagetian-Type Training Activities on the Cognitive Functioning of Emotionally Disturbed Children. (University of South Carolina, 1980.) DAI 41B: 3910-3911; April 1981. [8102777] [elementary]

Loyd, Brenda Holliday. Functional Level Testing and Reliability: An Empirical Study. (The University of Iowa, 1980.) DAI 42A: 182; July 1981. [8114281] [grade 6]

Lunsford, Dannie Gay. Responses in North Carolina High Schools to Mandated Remediation for Students Failing the Competency Examination. (The University of North Carolina at Chapel Hill, 1980.)

DAI 42A: 484; August 1981. [8114778] [secondary]

Maglio, Rodolfo. A Survey of Illinois Community College Student and Faculty Evaluations of Mathematics Curricula for Non-Mathematics Majors. (Northwestern University, 1980.) DAI 41A: 3931; March 1981. [8104740]

Textbooks and school catalogs were in agreement on the content of mathematics courses for liberal arts students. (community college)

Mann, Millard, Jr. A Study of Selected Mathematical Competencies for Selected Accounting Positions. (University of Cincinnati, 1981.) DAI 42A: 1920-1921; November 1981. [8123769] [adults]

Marsh, Martha Elizabeth. Academic Achievement and School-Wide Grouping of Students in Two Middle Schools. (The University of Florida, 1980.) DAI 42A: 528-529; August 1981. [8115653] [grades 5-8]

Martin, Hannah Sutter. A Follow-Up Evaluation of Middle-School Students Who Are Currently High School Juniors or Freshmen. (Georgia State University-College of Education, 1981.) DAI 42A: 2631; December 1981. [8126193] [grades 9, 11]

Martin, Marcee M. Evaluation of a "Planned Program" for Teacher Use of Competency Test Results. (Wayne State University, 1980.) DAI 41A: 4688; May 1981. [8107263] [teachers, grades 4, 7]

Matthews, Westina Lomax. Race- and Sex-Related Differences in High School Mathematics Enrollment. (The University of Chicago, 1980.) DAI 41A: 3934; March 1981. [--]

Few sex-related differences in enrollment patterns or motivating factors were found, but race-related differences were noted. (secondary)

Mauk, Cherry Nell Creamer. A Comparison of Two Learning Hierarchy Validation Techniques. (The University of Texas at Austin, 1981.) DAI 42A: 1038-1039; September 1981. [8119332]

Two hierarchy validation techniques were not found to be equivalent. The Walbesser ratios were more stringent than the Clark C test. (college)

Mauland, Lyle Edgar. An Analysis of the Philosophy of Martin Buber with Implications for the Development of Instructional Theory in Mathematics Education. (University of Denver, 1980.) DAI 42A: 2007-2008; November 1981. [8121420] [--]

Mayberry, JoAnne Walker. An Investigation of the van Hiele Levels of Geometric Thought in Undergraduate Preservice Teachers. (University of Georgia, 1981.) DAI 42A: 2008; November 1981. [8123078]

Over half of the responses were below van Hiele's level II, largely because of six students who had not taken high school geometry. (college)

Mayes, Leslie William. An Evaluative Study of the First Year of an

Elementary School Mathematics Problem-Solving Program. (University of Oregon, 1980.) DAI 41A: 4633; May 1981. [8109549]

Students learned problem-solving skills "to a satisfactory extent"; all teachers were effective "to some extent" in teaching problem-solving skills. (grade 4)

Mazareas, James. Effects of Class Size on the Achievement of First Grade Pupils. (Boston University School of Education, 1981.) DAI 42A: 2490; December 1981. [8126729] [grade 1]

Mazzuchi, Teresa Ann. The Relative Effectiveness of Positive and Negative Consequences in Contingency Contracts to Increase Daily Arithmetic Performance. (The University of Tennessee, 1980.) DAI 41A: 3493; February 1981. [8104607] [elementary]

McCabe, Robert Justin. A Comparison of the Accuracy Achieved by Students in Shop-Related Vocational Education Classes Through the Use of Metric and English Linear Measurement Systems. (Auburn University, 1981.) DAI 42A: 1609; October 1981. [8120498] [junior and senior high school]

McCuller, Crissy Cloudt. The Effects of Varying the Syntactic Complexity of Mathematics Word Problems on the Performance of Learning Disabled Students. (The University of Texas at Austin, 1981.) DAI 42A: 1099; September 1981. [8119334]

Sentence complexity had more effect as grade level decreased. (grades 3-8)

McEntire, Mary Elizabeth. Relationships Between the Language Proficiency of Adolescents and Their Mathematics Performance. (The University of Texas at Austin, 1981.) DAI 42A: 1039; September 1981. [8119335]

Language proficiency in reading and in writing were related to mathematics performance. (grade 8)

McLane, Darlene Harris. The Relation of Teacher Empathy, Mathematics Training, and Pedogogical [sic] Preparation to Changes in Their Students' Achievement and Attitude. (University of Houston, 1980.) DAI 41A: 3862; March 1981. [8105358]

A correlation of .60 was found between teacher characteristics and student attitudes and achievement. (teachers in grade 7)

McLaughlin, Brian. An Experimental Comparison of Discovery and Didactic Computerized Instructional Strategies in the Learning of Computer Programming. (The Catholic University of America, 1981.) DAI 42A: 529-530; August 1981. [8116843] [college]

McLaughlin, Judith Androit. Children's Understanding of Relational Terms and Operational Development. (Clark University, 1981.) DAI 1649; October 1981. [8118819] [ages 4-9]

McMillan, Margaret Ann. A Study of Drafting Abilities and Mathematics Abilities of High School Students in a First-Year Course of

Industrial Arts Drafting. (East Texas State University, 1981.) DAI 42A: 2002; November 1981. [8116864] [ages 14, 15]

McSpadden, Keith Wood. The Association of Double-Session Attendance and Pupil Achievement at the Second-Grade Level. (Northern Arizona University, 1981.) DAI 42A: 82-83; July 1981. [8114644] [grade 2]

Meece, Judith Lynne. Individual Differences in the Affective Reactions of Middle and High School Students to Mathematics: A Social Cognitive Perspective. (The University of Michigan, 1981.) DAI 42A: 2035-2036; November 1981. [8125167]

As grade level increased, students rated their mathematical abilities and performances as lower, and viewed mathematics as more difficult and less useful and valuable. (grades 5-10)

Mehlhorn, John Freeman. Piaget, Freshman Algebra and Prediction of Success. (University of Northern Colorado, 1981.) DAI 42A: 1039; September 1981. [8119803]

The Burney Test predicted success in algebra, but algebra did not contribute to the development of formal logical reasoning. (grade 9)

Melillo, Matthew M. Design and Implementation of Objectives-Based Programs: A Model and Partial Validation. (University of Massachusetts, 1981.) DAI 41A: 4961; June 1981. [8110352]

A "basic" mathematics curriculum was produced, consisting of 96 objectives. (grades 3-6)

Miller, Janet Louise Kraft. Competition, Maturation Rate, and Motive to Avoid Success in Math as Predictors of Performance on a Spatial Task. (University of Washington, 1981.) DAI 42B: 2602; December 1981. [8126129]

Girls showed more motive to avoid success at all levels. Spatial performance was highest under conditions of opposite-sex competition. (grades 5, 8, 11)

Miller, L. D. An Analysis of Mixed Cerebral Dominance (Torque) and Academic Achievement and Intelligence Test Performance in Elementary School Students. (United States International University, 1981.) DAI 42B: 780-781; August 1981. [8116171] [grades 2, 4, 6]

Miller, Linda Herman. The Relationship of Selected Variables in Mathematics Achievement of Teacher Education Applicants. (East Tennessee State University, 1980.) DAI 41A: 3359-3360; February 1981. [8025888]

Differences in achievement and attitudes were not found between males and females. Some correlations of attitude and achievement were noted. (college)

Miri, Eftekhar. The Effect of Educational Practices on Attitudes Toward Mathematics Among Two Age Groups of Iranian and American

Students. (Fordham University, 1981.) DAI 42B: 2100-2101; November 1981. [8123561]

Iranian students had significantly higher attitudes toward mathematics than American students. (grades 4, 12)

Montiel, Reyes. Implementation and Evaluation of a PSI Mastery-Based Curriculum in General Studies for the "Colegio Universitario de Cabimas," Venezuela. (University of San Francisco, 1980.) DAI 41A: 4595; May 1981. [8110590] [college]

Moskol, Ann Eleanor. An Exploratory Study of the Processes That College Mathematics Students Use to Solve Real-World Problems. (University of Maryland, 1980.) DAI 41A: 4320; April 1981. [8104963]

Students constructed more arithmetic than algebraic models. Many tested their solutions. (college)

Mowrer, Ruth Ann DeLine. A Longitudinal Study of Cognitive Achievement in a Selected Program of Accelerated Christian Education. (The University of Michigan, 1981.) DAI 42A: 1949; November 1981. [8125174] [grades 4-12]

Mundy, Joan Ferrini. Spatial Ability, Mathematics Achievement, and Spatial Training in Male and Female Calculus Students. (University of New Hampshire, 1980.) DAI 41A: 4633; May 1981. [8108871]

Significant correlations were found between spatial visualization and other scores; some differences favored males and others, females. (college)

Murphy, Elwanda Bray. The Relationship Between Teachers' Expectations and Students' Knowledge of Mathematical Terminology for the Elementary Grades. (Northwestern State University of Louisiana, 1980.) DAI 41B: 4548; June 1981. [8110239]

Fourth-grade teachers anticipated pupils' difficulty with 55 per cent of the terms; seventh-grade teachers anticipated difficulty with 20 per cent. (grades 4, 7)

Murphy, Nancy Kathleen. The Effects of a Calculator Treatment on Achievement and Attitude Toward Problem Solving in Seventh Grade Mathematics. (University of Denver, 1981.) DAI 42A: 2008-2009; November 1981. [8121439]

Students with unrestricted use of calculators achieved higher problem-solving scores than students not using calculators for instruction or tests. (grade 7)

Muzzio, Timothy Charles. Acquisition of the Negative Relational Term 'Less' as it Relates to Seriation. (University of Maryland, 1980.) DAI 42A: 538-539; August 1981. [8117359] [?]

Nauheim, Jamie Lynn. The Relative Efficacies of Anxiety Management Training, Negative Practice and Cognitive Therapy in the Treatment of Test Anxiety. (Hofstra University, 1980.) DAI 42B: 384; July 1981. [8111360] [secondary]

Nelson, Roger Dale. A Study of the Relationship of Twelve Variables to the Results of the Basic Essential Skills Test in Selected Missouri School Districts. (University of Missouri-Columbia, 1980.) DAI 41A: 4566; May 1981. [8108835] [grade 8]

Nichols, Jean Ann. Problem Solving Strategies and Organization of Information in Computer Programming. (The Catholic University of America, 1981.) DAI 41B: 4721-4722; June 1981. [8111640] [college]

Nowakowski, Alan Charles. An Empirical Study of the Equipercentile Assumption as a No-Treatment Expectation in Title I Evaluations. (Western Michigan University, 1981.) DAI 42A: 2627; December 1981. [8126356] [grades 2-5]

O'Brien, John Joseph. The Relationship Between Piagetian Cognitive Level and Memory Level in the Logical and Spatial Domain for Suburban Eighth Grade Students. (Rutgers University The State University of New Jersey (New Brunswick), 1981.) DAI 42A: 1555; October 1981. [8120843] [grade 8]

O'Neal, Larry Dean. A Comparison of the Predictors of Success of University and Junior College Students in the Initial Calculus Course. (The University of Mississippi, 1980.) DAI 41A: 4620-4621; May 1981. [8108766]

For university and junior college students significantly different equations were required for predicting grades in calculus. (college)

Onuoha, Nwankire Chikezie. Computers and Computer Utilization in Nigerian Universities with Guidelines for Improved Utilization. (Columbia University Teachers College, 1981.) DAI 41A: 5046-5047; June 1981. [8111525] [college]

Owen, Jerry Monroe. A Survey of Teacher Perspectives and Practices of Selected Individualized Instructional Elements in Middle-Level Schools. (University of Colorado at Boulder, 1980.) DAI 42A: 77-78; July 1981. [8113992] [junior high teachers]

Palmer, Michael Eugene. Trigonometry Instruction: An Aptitude Treatment Interaction Study. (The Ohio State University, 1980.) DAI 41A: 2982-2983; January 1981. [8100218]

No significant difference was found between angle or circle approaches for students at different levels of field independence and Piagetian reasoning. (college)

Parrino, Leonard William. The Use of Cognitive Development Tasks as Predictors of Success in Developmental Mathematics Courses. (Rutgers University The State University of New Jersey (New Brunswick), 1981.) DAI 42A: 1522; October 1981. [8120845]

Students successful at one or two given tasks were more likely to achieve A or B grades in the mathematics course. (community college)

Parrish, Gene Lee. The Effects of a Self-Concept Enhancement Module on Self-Concept and Academic Performance of Black Community College Students. (Arizona State University, 1981.) DAI 42A: 555; August 1981. [8117180] [community college]

Patterson, Marian Jackson. California's School Improvement Program: A Comparison of Student Performance on Proficiency Tests. (University of Southern California, 1981.) DAI 42A: 1420; October 1981. [--] [junior and senior high school]

Pennau, Joan Ellen Erdman. The Relationship Between Early Entrance and Subsequent Educational Progress in the Elementary School. (University of Minnesota, 1981.) DAI 42A: 1478; October 1981. [8115026] [grades 3-6]

Peterson, James. Thinking Aloud as a Technique in Facilitating Mathematical Achievement for Title I Children in Grades One, Two, and Three. (The University of Mississippi, 1981.) DAI 42A: 1478; October 1981. [8117289]

Children taught a thinking-aloud procedure did not score higher than those not taught the procedure. (grades 1-3)

Philips, David William. Neuropsychological Differences Among Children with Good and Poor Academic Skills. (University of Washington, 1980.) DAI 41A: 4658; May 1981. [8109762] [ages 5-8]

Phillips, Jack. A Self-Paced Multi-Media Remedial Algebra Course at an Urban Community College. (New York University, 1981.) DAI 42A: 587; August 1981. [8115522]

Students in the experimental group achieved significantly higher scores than those taking the usual course. (community college)

Pieper, Edward Lawrence. Analysis of Cognitive Abilities of Students Learning Disabled Specifically in Arithmetic Computation. (University of Kansas, 1979.) DAI 41A: 3051; January 1981. [8102029]

Students failing to learn computation, but average in reading, had difficulty on two visual-spatial tasks and one reasoning task. (grades 7-9)

Pifer, Raymond Eugene. Effects of the Use of Feedback on Achievement. (The University of Chicago, 1981.) DAI 42A: 916; September 1981. [--]

Use of feedback as part of a method for teaching algebra was found to be effective. (grade 9)

Piorkowski, Jane Korza. Effects of Formal Assessment Procedures by General Achievement in and Attitude Toward Mathematics. (The University of Connecticut, 1980.) DAI 41A: 3931-3932; March 1981. [8106748]

A significant difference attributable to community size was found between groups who took the state assessment test once or twice. Attitude scores differed by sex. (grade 8)

Plog, Claudia Elizabeth. The Relationship of Selected Variables in Predicting Academic Success in Computer Programming. (East Texas State University, 1980.) DAI 41A: 2903-2904; January 1981. [8027678] [community college]

Pounds, Mary Linda. The Derivation of a Prediction Equation to Identify Potential Dropouts Among Students Initially Accepted to an Urban University as Remedial Students. (Georgia State University-College of Education, 1981.) DAI 42A: 916; September 1981. [8120123] [college]

Power, Gayle Mary. An Investigation of the Effects of Direct and Functional Reading Instruction upon Mathematical Problem Solving Abilities of Elementary School Children. (The University of Connecticut, 1980.) DAI 41A: 3417; February 1981. [8103226]

Direct instruction on reading skills appeared to be more effective in grade 3; differences were slight in grade 5. (grades 3, 5)

Proudfit, Linda Ann. The Examination of Problem-Solving Processes by Fifth-Grade Children and Its Effect on Problem-Solving Performance. (Indiana University, 1980.) DAI 41A: 3932; March 1981. [8105942]

Differences on evaluation and planning stages of problem solving favored the pupils given instruction based on Polya's model. (grade 5)

Reinauer, Charles David. An Investigation of Selected Intellective and Non-Intellective Variables and Their Use in Predicting Success in Two Instructional Formats of a College Algebra Course. (University of Houston, 1979.) DAI 41A: 3932; March 1981. [8106756]

A significant amount of variance in predicting success in the course was accounted for by the selected variables, but there was no significant interaction with instructional format. (college)

Revicki, Dennis Albert. The Relationship Among the Social Psychological Family Environment, Parent Involvement in an Intervention, and Child Achievement. (The University of North Carolina at Chapel Hill, 1981.) DAI 42A: 2484-2485; December 1981. [8125612] [grade 2]

Reyes, Laurie Hart. Classroom Processes, Sex of Student and Confidence in Learning Mathematics. (The University of Wisconsin-Madison, 1981.) DAI 42A: 1039-1040; September 1981. [8116012]

Boys and girls participated differently in mathematics classroom processes, though differences were not as large as expected and not consistent across classrooms. (grade 7)

Richardson, Dianna Blair. Matching Teaching Strategy to Available M-Space: A Neo-Piagetian Approach to Word Problems. (Virginia Polytechnic Institute and State University, 1980.) DAI 42A: 587; August 1981. [8116803]

In general, students did better when trained with a strategy matching their M-space, but some exceptions occurred. (grade 1)

Richardson, Mikel Freeman. An Assessment of Mathematics Anxiety Levels Among Adult Basic and Adult Secondary Students. (University of Georgia, 1980.) DAI 41A: 4254-4255; April 1981. [8107942]

Interactions were found among anxiety, and sex, age, functional level, and mathematical ability. (adults)

Richardson, Susan Ann. Effectiveness of Rational-Emotive Therapy or Problem-Solving/Relaxation in Reducing Math Anxiety and/or Improving Attitudes Toward Math in Potential Elementary School Teachers. (University of Wyoming, 1980.) DAI 41A: 4340; April 1981. [8106969]

No significant change was found between the two treatments on math anxiety. (elementary preservice)

Richey, James Douglas. A Study of ACT Mathematics Scores in Relation to Secondary Mathematics Curriculum During the Period, 1970-1979. (East Texas State University, 1981.) DAI 42A: 587-588; August 1981. [8117326]

The secondary school mathematics curriculum became less rigorous during the 1970s; ACT scores declined. (community college)

Ridgeway, Ina Campbell. Elements of Cognitive Style, Mathematics Anxiety, and Sex as They Relate to Achievement of High School Chemistry Students. (Indiana University, 1980.) DAI 42A: 161; July 1981. [8112451] [secondary]

Riticomrop, Thanomsri. Comparative Study of Mathematics Achievement for Seventh Graders in Central and Marginal Areas of Bangkok, Thailand. (University of Northern Colorado, 1980.) DAI 41A: 4271-4272; April 1981. [8108241] [grade 7]

Roby, Cecil Edgar. Models for the System of Integers and the Learning of Integer Concepts at the Elementary School Level. (George Peabody College for Teachers of Vanderbilt University, 1981.) DAI 42A: 1522-1523; October 1981. [8121590]

The diagrammatic model was better than two others; the concrete-manipulative model fostered more rapid growth than the concrete-representational model. (grade 3)

Rodenstein, Judith Merle. Sex Differences in the Influence of Mathematically-Related Attitudes and Activities During High School on the Status of a Gifted Student's Occupation. (The University of Wisconsin-Madison, 1980.) DAI 41A: 3889; March 1981. [8025846]

No sex differences were found in the cognitive variables studied, but they were found in variables related to educational development, affective reactions, and occupational distribution. (adults)

Rodriguez, Elizabeth. Impact of Creativity Training on Academic Achievement and Creative Thinking Skills Concerning Four Ethnic-Sex Groups in the Fourth Grade. (New Mexico State University, 1980.) DAI 41A: 3334; February 1981. [8104568] [grade 4]

Rogers, Barbara Dillard. North Carolina's Minimum Competency Testing

Program and Mathematics Textbooks. (Duke University, 1981.) DAI 42A: 2061; November 1981. [8121282]

Some problem-solving objectives on the test had little coverage in the two textbook series analyzed. (grades 3-8)

Rogge, William Earl. The Adaptation of National Assessment of Educational Progress Materials for Mathematics Assessment at the Local Level. (The University of Nebraska-Lincoln, 1980.) DAI 41A: 2983; January 1981. [8100439]

A 14-step model was tested and found to be operational. (ages 9, 13, 17)

Rosamond, Frances Ann Novak. Listening to Students in the Cornell Mathematics Support Center. (Cornell University, 1981.) DAI 42A: 1523; October 1981. [8119425]

The importance of listening to students and considering their feelings is stressed. (college)

Rosen, Marilynne Sue. The Cerebral Dominance of Arithmetic Abilities in Young Children: An Exploratory Study: (Ohio University, 1980.) DAI 41B: 3196; February 1981. [8103040]

There was no evidence that the Poor Reading-Good Arithmetic group had better visual-spatial skills than the Good Reading-Poor Arithmetic group; thus, right hemisphere superiority for arithmetic skills was not supported. (grade 1)

Rosenbaum, Roberta S. A Study to Determine the Effect on Achievement and Course Attitude When Community College Students Write and Execute Computer Programs for Selected Topics in Elementary Statistics. (New York University, 1980.) DAI 41A: 5013-5014; June 1981. [8110680] [community college]

Rosenberg, Judith Hilda. The Ability of Selected Cognitive, Affective, and Educational Variables to Predict the Presence of Anxiety Related to Mathematics. (The University of Connecticut, 1980.) DAI 41A: 3890; March 1981. [8106749]

High levels of mathematics anxiety were related to low levels of such variables as achievement and parent attitudes. (college)

Rosenfield, Wayne David. A Developmental and Deficit Comparison of Intellectually Normal and Retarded Children Based on Measures of Academic Achievement and Cerebral Functional Asymmetry. (The University of Connecticut, 1980.) DAI 41A: 3957-3958; March 1981. [8106750] [grade 3]

Rosenholtz, Stephen H. Effect of Task Arrangements and Management Systems on Task Engagement of Low Achieving Students. (Stanford University, 1981.) DAI 42A: 1950; November 1981. [8124145] [elementary]

Ross, Melvin Victor. Selected Aspects of Remediation in Baltimore City Public Schools Secondary Summer School Program. (University of Maryland, 1980.) DAI 42A: 462-463; August 1981. [8117370]

[grades 7-11]

Ross, Peter. Student Difficulties in Solving Calculus Word Problems. (University of California, Berkeley, 1980.) DAI 41A: 3465; February 1981. [8029567]

No significant difference in achievement was found between students who used problem-solving booklets or only the course text. (college)

Rothblum, Esther Davida. Prediction of Cognitive and Affective Components of Learned Helplessness from Seligman's Three-Dimensional Attribution Model. (Rutgers University The State University of New Jersey (New Brunswick), 1980.) DAI 41B: 3588; March 1981. [8105045] [college]

Rothschild, Susan J. Schaflander. Factors Influencing the Mathematics-Related Attainment of a National Sample of Hispanic, Black, and White Women. (Virginia Polytechnic Institute and State University, 1981.) DAI 42A: 2547; December 1981. [8126285]

Different variables exerted the greatest influence on each group. (college)

Rule, Ann Marie. A Study of the Diagnostic/Prescriptive Process of Teaching Mathematics with Respect to Change in Attitude Toward Mathematics and Change in Achievement in Mathematics for Fourth and Sixth Grade Inner-City School Students. (Kent State University, 1981.) DAI 42A: 2009; November 1981. [8123576]

Teaching method was not significantly related to change in student attitude toward mathematics or achievement. (grades 4, 6)

Rule, Robert Loren. The Effect of Hand Held Calculators on Learning About: Functions, Functional Notation, Graphing, Function Composition, and Inverse Functions. (Iowa State University, 1980.) DAI 41A: 3866; March 1981. [8106048]

No significant differences were found between groups who used or did not use calculators for a unit on functions. (college)

Russell, Robert Loring. The Cognitive Nature of Learning Disabilities in Mathematics. (Cornell University, 1981.) DAI 41B: 4710; June 1981. [8110964]

Few differences in task scores were found between learning-disabled fourth graders and other pupils in grades 3 and 4. (grades 3, 4)

Rynone, William John, Jr. An Investigation of the Impact of Specialized Training in the Use of the Hand-Held Calculator on Selected Engineering Technology Students. (New York University, 1980.) DAI 41A: 5014; June 1981. [8110682]

Students having formalized training in the use of calculators scored higher than those not having the training. (college)

Salama, Hassan Ali. The Effect of the Place-Value Method of Teaching Long Division upon the Teaching Ability of Prospective Elementary

Teachers. (The Florida State University, 1981.) DAI 42A: 2547-2548; December 1981. [8125807]

Learning the place-value technique for teaching division favorably affected the mathematical understanding and teaching performance of ten student teachers. (elementary preservice teachers in grade 5)

Sampson, Gilbert Lane. Attainment of Piaget's Formal Operational Level in Mathematics Relative to Ethnic Group and Reading Ability. (New York University, 1980.) DAI 41A: 5014; June 1981. [8110708]

At no age tested did a majority of the students attain the formal operational level for each of the tasks of exclusion, proportion, and combination. (ages 11-17)

Sancho, Anthony Ralph. Bilingual Education: A Three-Year Investigation Comparing the Effects of Maintenance and Transitional Approaches on English Language Acquisition and Academic Achievement of Young Bilingual Children. (Claremont Graduate School, 1980.) DAI 41A: 3935-3936; March 1981. [8103830] [grades K-2]

Scheding, John Corbin. Teachers' Perceptions of the Nature of Mathematics, and the Effect of Instruction Thereon. (University of Colorado at Boulder, 1981.) DAI 42A: 1523; October 1981. [8122328]

Secondary teachers had perceptions of mathematics conforming closely to those of mathematicians, followed by prospective secondary teachers, elementary teachers, and prospective elementary teachers. (pre- and in-service teachers)

Schmid, Claire Hennessy. A K.I.D.S. Reinforcement Program: A Program for Schools Using the Kindergarten Inventory of Developmental Skills Screening Test. (Saint Louis University, 1980.) DAI 41A: 4272; April 1981. [8100505] [grade K]

Schulz, George C. The Effects of Peer Tutoring on the Self-Concept of Dropouts. (Yeshiva University, 1980.) DAI 41A: 3495-3496; February 1981. [8103731]

Both tutors and students tutored made gains in mathematics achievement. (secondary)

Scott, Paul Douglas. A Study of Mathematical Problem Solving in a Multiple-Choice Format. (The Florida State University, 1980.) DAI 41A: 2983; January 1981. [8100651]

The mean score for the constructed response test was significantly lower than for either of two multiple-choice forms. Differences between high- and low-ability problem solvers were also noted. (grades 8, 11)

Scroggins, Fredna Carlson. An Exploratory Study of the Relationship Between Teacher Reacting Moves and Subsequent Student Verbal Participation in Selected Ninth Grade Algebra Classes. (Southern Illinois University at Edwardsville, 1980.) DAI 41A: 4353; April 1981. [8107089]

Patterns of moves and percentages of verbal behaviors were reported. (grade 9)

Sewak, Lynda Longbons. The Feasibility of Teachers Predicting Accurate Student Performance Outcomes for Secondary Schools. (Miami University, 1981.) DAI 42A: 992; September 1981. [8119103] [teachers in grades 9-12]

Shaning, Dennis Joseph. Prediction of Divergent Thinking and Problem Solving from Ratings of Behavioral Characteristics. (Fordham University, 1981.) DAI 42A: 1560; October 1981. [8120075]

Mathematics achievement was the single best predictor for problem-solving scores. (grades 4-6)

Sharma, Man Mohan. A Study of the Use of Hand-Held Calculators and Computer Managed Instructions in Developmental Sections of a College Algebra Course. (Ohio University, 1980.) DAI 41A: 3465-3466; February 1981. [8103041]

Students using calculators or the computer-managed system achieved significantly better than students not using calculators or the computer-managed system. (college)

Sharpe, Audrey Howell. Effects of Assertive Discipline on Title I Students in the Areas of Reading and Mathematics Achievement. (Ball State University, 1980.) DAI 42A: 1531; October 1981. [8122002] [grades 5, 6]

Sharpe, Peter Richard. The Effects of Individualized and Group Criteria for Reinforcement on Math Performance of School Children. (University of Oregon, 1980.) DAI 41B: 4644; June 1981. [8109695]

Differences were observed favoring individualized criteria for the higher-performing groups, but almost no differences were found for the lower groups. (grade 5)

Sheel, Stephen John. The Effect of Cognitive Style on the Acquisition of Mathematical Concepts Presented Through Emphasis on Positive and Negative Instances. (The University of Oklahoma, 1981.) DAI 42A: 122; July 1981. [8113249]

No significant achievement difference was found between groups having positive and negative or all positive instances. (college)

Shively, John Charles. An Investigation of Effects of the Hand-Held Calculator on the Mathematics Achievement of Students at the Seventh Grade Level. (University of Southern California, 1980.) DAI 41A: 2921; January 1981. [--]

No significant difference in application ability or computational skills was found between students using or not using calculators. (grade 7)

Shoemaker, Sharon Harpring. Assessing the Construct Validity of a Criterion-Referenced Test: A Nomological Network Approach. (Virginia Polytechnic Institute and State University, 1981.) DAI

42A: 1111-1112; September 1981. [8118713]

The mathematics test had validity at the objectives level, but only marginal validity at the total test level. (grade 6)

Siegel, Phyllis E. Problem Solving Processes Assessed by Verbal Responses. (Fordham University, 1981.) DAI 42A: 1561; October 1981. [8120077]

Some differences between good and poor problem solvers were found. Different strategies were used for each problem. (grades 5, 6)

Silver, Nathaniel Lee. Elementary Calculus Curriculum Revised: Images and Concepts. (Cornell University, 1980.) DAI 41A: 3466; February 1981. [8102953]

The curriculum was revised using heuristic images and examples directly related to the concepts and conceptual structures mathematicians use. (college)

Silverberg, Roberta Roth. Teaching Algebraic Concepts Through the Use of Coding Theory. (Rutgers University The State University of New Jersey (New Brunswick), 1981.) DAI 42A: 1523-1524; October 1981. [8120860]

Students given the developed units scored higher than a comparison group on one of two subtests. (secondary)

Simpson, James Franklin. A Study of Classroom Climate and Its Relationship to Self Concept and Achievement of Educable Mentally Handicapped Children. (George Peabody College for Teachers of Vanderbilt University, 1980.) DAI 41A: 3824; March 1981. [8105470] [secondary (MRs)]

Skolnick, Sidney Jay. The Effects of Physical Activities on Academic Achievement in Elementary School Children. (Temple University, 1981.) DAI 42A: 601-602; August 1981. [8115958] [grade 6]

Slesnick, Twila Lee. Algorithmic Skill vs Conceptual Understanding. (University of California, Berkeley, 1980.) DAI 41A: 2983-2984; January 1981. [8029593]

No findings are reported from this study on the division algorithm. (grade 6)

Smith, Selma Ann. A Social Learning Counseling Program to Increase the Internal Locus of Control and Academic Achievement of Learning Disabled Elementary School Children. (Boston University School of Education, 1981.) DAI 41A: 5037; June 1981. [8112270] [grades 4-6]

Soileau, Lola Fonville. An Investigation of Academic Achievement and Selected Self Concept Factors of Magnet and Nonmagnet Middle School Students. (The Louisiana State University and Agricultural and Mechanical College, 1981.) DAI 42A: 2428; December 1981. [8126979] [grades 6-8]

Sousa, Gail Ann. A Comparison of Alternative Instructional Approaches

for the Analysis of Verbal Mathematical Problems. (Boston University School of Education, 1981.) DAI 42A: 2548; December 1981. [8126768]

The wanted-given approach was slightly better than the action-sequence approach for choosing the correct operation. (grade 3)

Sowa, Claudia Jean. Alleviation of Learned Helplessness in College Freshmen with Performance Difficulties in Mathematics. (Michigan State University, 1980.) DAI 41A: 4295; April 1981. [8106447]

Significant differences on some attitude scales were found between groups given cognitive-restructuring or contingency-based treatments. (college)

Spungin, Rika C. The Relationship of Mathematics Anxiety and Problem Solving Attitude to the Problem Solving Performance of Female Prospective Early Childhood Teachers. (Boston University School of Education, 1980.) DAI 41A: 3932-3933; March 1981. [8101915]

The students had little mathematics anxiety, but their attitude toward problem solving was only slightly favorable. (elementary preservice)

Standiford, Sally Newman. The Effects of Organization of Mathematics Text on Processing and Learning Outcomes. (University of Illinois at Urbana-Champaign, 1980.) DAI 41A: 4662; May 1981. [8108673]

Groups receiving "ordered text" did significantly better than the group reading "transposed text." (college)

Stanton, George Conrad. Effects of Content Structure, Algorithms, and Generativity on Cognitive Structure and Achievement in Mathematics. (Stanford University, 1981.) DAI 41A: 4662; May 1981. [8109000]

Some results indicated that the material having a clear conceptual structure was effective. (college)

Stark, Jean Peterson. The Relationship of Anxiety to Achievement in Community College Remedial Algebra Classes with Differing Levels of Student Participation. (Loyola University of Chicago, 1981.) DAI 42A: 992-993; September 1981. [8118333]

No significant achievement differences were found between groups allowed high or low levels of participation. (community college)

Steinhoff, Richard Lee. Factors Affecting Mathematics Attitudes in Community College Students. (Purdue University, 1980.) DAI 42A: 588; August 1981. [8113765]

An attitude scale based on students' language was developed; factor analysis identified five subscales. (community college)

Stern, William Russell. Nonintellective Concomitants of Discrepant Achievement in Reading and Math. (The University of Texas at Austin, 1980.) DAI 41A: 3019; January 1981. [8100970] [ages 6-14]

Steve, Michael Harold. Effects of Rule Selection Training in Tasks

Requiring Both Rule Selection and Rule Application Capabilities. (The Florida State University, 1980.) DAI 41A: 3867; March 1981. [8104874] [grade 7]

Stewart, James Thomson, Jr. Using the Hand-Held Calculator as a Computing Aid for Instruction in Word-Problem Solving with Elementary Grade Students. (University of Illinois at Urbana-Champaign, 1980.) DAI 41A: 4634; May 1981. [8108676]

Using a calculator during instruction in problem solving produced significant improvement in less time than with pencil-and-paper computation. (grades 4-6)

Still, Jacquelyn Hughes. Gifted Student Achievement in Full-Time and Part-Time Programs: A Comparative Study of Ninth Graders. (The University of Florida, 1981.) DAI 42A: 2077; November 1981. [8124458]

Scores on the mathematics problem-solving test were significantly higher for students in the full-time gifted program than for those in the part-time program. (grade 9)

Suebsonthi, Prapavadee. Acquisition of a Mathematical Concept by Children Using Prototype and Skill Development Instructional Presentation Forms. (University of Minnesota, 1980.) DAI 41A: 4599; May 1981. [8109515]

Concept learning was better facilitated by a presentation of the best examples than by giving a list of attributes. (grade 3)

Tabler, M. Bernadine. The Relationship Between One Dimension of Cognitive Style and Students' Mathematics Performance. (Indiana University, 1980.) DAI 41A: 4281-4282; April 1981. [8105991]

No significant differences in levels of field dependence-independence, achievement in mathematics, or intelligence were found between males and females; males scored higher on spatial ability. (grade 5)

Taole, James Kopano. A Study of the Effect on Pupils' Achievement of Studying a Selected Secondary School Mathematics Topic in the Vernacular. (Columbia University Teachers College, 1981.) DAI 42A: 2009; November 1981. [8122985] [secondary]

Taylor, Evelyn Lundy. The Development and Validation of an Instrument to Assess Selected Mathematical Skills of Children Prior to Their First Formal Instructional Year of School. (Auburn University, 1981.) DAI 42A: 183-184; July 1981. [8114919]

The instrument was found to have reliability of .81, .83, and .85. (grade 1)

Taylor, Timothy Davies. A Multicomponent Treatment Model for Reducing the Test Anxiety of High School Mathematics Students. (United States International University, 1980.) DAI 41B: 3563; March 1981. [8103991]

The "lecture verba' interaction" method was effective in reducing

anxiety and improving performance in some classes. (grade 10)

Thaeler, John Schropp. The Relationship of Piagetian Number Conservation and Concepts to Levels of Processing of the Basic Addition Facts. (The Florida State University, 1981.) DAI 42A: 2548-2549; December 1981. [8125847]

A significant relationship was found between developmental level and strategy used in getting answers to addition combinations. (grades 1, 7)

Thomas, Roy Jackson. Item Parameters, Student Parameters, Student Scores, and the Perceptions of Directors of Curriculum/Instruction Regarding Cut-Off Scores and Failure Rates for an Eleventh Grade Mathematics Assessment Test. (Northwestern State University of Louisiana, 1981.) DAI 42A: 1112; September 1981. [8117662]

Significant differences were found between districts on perceptions of scoring procedures, and between scores from 1978 and 1979. (grade 11)

Thomas, William Edward. The Effects of Playing the Game of Master Mind on the Cognitive Development of Concrete-Operational College Students. (University of Missouri-Columbia, 1980.) DAI 42A: 1089; September 1981. [8117475]

Students in the problem-directed group performed significantly better than those in a non-directed or a control group. (college)

Thompson, Louisa Ann Burke. The Prediction of Academic Achievement and Self-Concept in Gifted Children. (University of Washington, 1980.) DAI 41A: 3497-3498; February 1981. [8026320] [ages 7-15]

Tuli, Mulkh Raj. Mathematical Creativity as Related to Aptitude for Achievement in and Attitude Towards Mathematics. (Panjab University (India), 1980.) DAI 42A: 122-123; July 1981. [--]

Significant positive correlations were found among aptitude for mathematics, achievement, and mathematical creativity. (grade 9)

Turner, Jonathan. Factors That Affect Attrition in an Accelerated Secondary Mathematics Program. (The University of Iowa, 1980.) DAI 42A: 123; July 1981. [8114309]

Reasons given for leaving the program and achievement and attitude scores are presented. (grade 12)

Utairat, Suwattana. An Evaluation of Procedures for Measuring Basic Mathematics Competence Under Conditions Where Diagnostic/Prescriptive Information is Provided as a Basis for Corrective Teaching: Study II. (The Pennsylvania State University, 1980.) DAI 41A: 3407-3408; February 1981. [8024500]

Significant reliability coefficients for the revised test were obtained. Most computation items served as good indicators for the problem-solving items. (grades 8, 10)

van Wyk, Petrus Cornelis. Orthopedagogic and Orthodidactic Assistance to Children with Specific Learning Problems in Mathematics in

Elementary Education. [Afrikaans Text.] (University of South Africa (South Africa), 1980.) DAI 42A: 174; July 1981. [--] [primary]

Viravaidhaya, Yupa. An Analysis of the Relationship Between the Piagetian Cognitive Level of Eleventh Grade Thai Students Who Are Science-Majors and Their Achievement in Biology, Physics, Chemistry, and Mathematics. (University of Northern Colorado, 1980.) DAI 41A: 4351-4352; April 1981. [8108248] [grade 11]

Waddell, Raymond Lee. A Model for Developing Student Proficiency in Basic Minimum Competencies Through a Program of Continuous Assessment for Diagnostic Purposes with Involvement of All Teachers. (Memphis State University, 1981.) DAI 42A: 2433; December 1981. [8127496] [grades 9, 10]

Wagner, Barbara Ann. The Effect of a Numeration Learning Hierarchy on Mathematic [sic] Attitudes in Kindergarten Children. (University of Houston, 1980.) DAI 41A: 3874; March 1981. [8105364]

The curriculum based on a hierarchy of numeration concepts, using student-confirmation of responses, resulted in more positive attitudes toward mathematics than use of a non-hierarchical curriculum. (grade K)

Walker, Bruce Worth. An Experiment to Determine the Effects of Mathematical Achievement and Attitudes Toward Mathematics of Prospective Female Elementary School Teachers by the Use of Supplementary Programmed Instruction. (Memphis State University, 1981.) DAI 42A: 2478; December 1981. [8127497]

Use of the programmed text in a lecture-discussion approach did not affect overall mathematics achievement or attitude. (elementary preservice)

Walker, Kenneth Ray. The Effect of Self-Analysis of Computational Errors on Achievement in Mathematics of Third, Fifth, and Seventh Grade Students. (East Texas State University, 1981.) DAI 42A: 2494; December 1981. [8127401]

Instruction in self-analysis of errors had more effect on achievement in grade 3 than in grade 5 or 7. (grades 3, 5, 7)

Wallace, Barbara Jean. Student Achievement in Small-Group Tutorial Programs. (University of Southern California, 1981.) DAI 41A: 3418; February 1981. [--] [grades 4-8]

Ward, Sidney Joseph. The Interactive Effects of Spatial Ability and Content on Analytical Reasoning. (University of Southern California, 1980.) DAI 41A: 3069; January 1981. [--] [?]

Warner, Thomas Daniel. The Effects of Computer-Based Education on Sixth-Grade Students' Self-Concept, Locus of Control, and Mathematics Achievement. (The University of Akron, 1981.) DAI 42A: 1040; September 1981. [8117733]

Use of the computer significantly improved mathematics achievement

for those in the upper 78 per cent of the sample. (grade 6)

Watson, Judith Binish. Effects of Modes of Instruction in Metrics on the Attitudes and Knowledge of Elementary School Inservice Teachers. (Fordham University, 1981.) DAI 42A: 1524; October 1981. [8120081]

No significant achievement or attitude differences were found between groups given audiovisual, workshop, or programmed instruction approaches to metric instruction.

Watt, Marcia Lynn. Comparison of Children's Pre-Kindergarten Skills and the Kindergarten Curriculum in Language Arts and Mathematics. (University of Oregon, 1981.) DAI 42A: 1946; November 1981. [8123521] [grade K]

Watts, Lee. Didactic Conservation Training: A Failure to Distinguish Between Conservation and Pseudoconservation. (University of Southern California, 1981.) DAI 41A: 3498; February 1981. [--] [grade K]

Webb, Lewis Vernon. The Relationship of Cognitive Styles and Academic Majors with University-Level Academic Achievement. (University of Southern California, 1981.) DAI 42A: 1563-1564; October 1981. [--] [college]

Weekley, Alice Louise Wolfcale. Effects of Group, Individual, and No Contingencies of Reinforcement on the Arithmetic Performance of Navajo and Hopi Students. (The Ohio State University, 1980.) DAI 41A: 4321; April 1981. [8107411]

Number of problems correct increased when individual reinforcement was given. (grade 7)

Wells, Gail Wilson. The Relationship Between the Processes Involved in Problem Solving and the Processes Involved in Computer Programming. (University of Cincinnati, 1981.) DAI 42A: 2009-2010; November 1981. [8123791]

The same processes were used in computer programming and in problem solving. (secondary)

Wersan, Norman. Utilizing a Self-Generated Visual Art Strategy to Facilitate Proportional Problem Solving in Mathematics. (Rutgers University The State University of New Jersey (New Brunswick), 1981.) DAI 42A: 1447; October 1981. [8120868]

No significant achievement differences were found between students given visual or verbal approaches to problem solving. (grade 9)

Wesley, Leonard Herbert, Jr. A Comparison of Achievement, Self-Concept Perceived School Environment of Students Attending Alternative and Non-Alternative Elementary Schools in Unified School District No. 259. (University of Kansas, 1980.) DAI 41A: 4929-4930; June 1981. [8111801] [grades 5, 6]

Wheat, David Ewing. The Effect of a Mathematics Workshop on the

Mathematical Performances of Paraprofessionals. (Memphis State University, 1981.) DAI 42A: 2549; December 1981. [8127498]

The workshop significantly improved the achievement of aides. (paraprofessionals)

White, Donald Edward. The Influence of Context and Perceptual Contrast in the Assessment of Piagetian Abilities: A Study of Evaluation by Video Procedures. (City University of New York, 1981.) DAI 41B: 4713; June 1981. [8112747] [grade 2]

White, June Miller. Cognitive Processes Indicative of Readiness for Hypothetico-Deductive Thought: A Comparison of Learning Disabled and Normal Adolescents. (Bryn Mawr College, 1980.) DAI 41A: 3500; February 1981. [8103610] [ages 12, 14, 16]

Whitfield, Charles. An Analysis of Sex-Role Stereotyping and Pupil Achievement. (Texas Tech University, 1980.) DAI 41A: 4973; June 1981. [8111959]

A negative statistical relationship was found between degrees of sex-role stereotyping and scores in mathematics and language arts. (grades 3, 5)

Wilkinson, Susan S. The Relationship of Teacher Praise and Student Achievement: A Meta-Analysis of Selected Research. (The University of Florida, 1980.) DAI 41A: 3998; March 1981. [8105630] [elementary]

Williams, Evelyn Barnett. Performance of Inner City Learning Disabled and Emotionally Disturbed Youth on Power and Timed Achievement Tests. (The University of Connecticut, 1981.) DAI 41A: 5063; June 1981. [8111924] [grades 4-6]

Williams, Henrietta Ellison. An Investigation of Two Types of Learning Disabilities Among College Level Students. (Southern Illinois University at Carbondale, 1980.) DAI 41A: 3534; February 1981. [8102440] [college]

Williams, John Ellison, Jr. An Ex Post Facto Study of the Effects of the South Carolina Public School Kindergarten Mathematics Program on Children Who Have Attended the First, Second, and Third Grades in the Chesterfield County School District as Measured by the California Test of Basic Skills. (University of South Carolina, 1981.) DAI 42A: 1952; November 1981. [8123450]

No significant achievement difference was found between students who attended or did not attend kindergarten. (grades K-3)

Williamson, Elaine Grieser. Sex Differences in Causal Attributions for Success and Failure and Affective Variables Associated with Mathematics Avoidance/Anxiety in a Secondary School Population. (Saint Louis University, 1980.) DAI 42A: 1524; October 1981. [8120639]

No significant differences were found in self-reported achievement or causal attributions for success or failure. Only on "usefulness

of mathematics" did females have a more positive attitude than males. (grades 9-12)

Wingo, Lauran Hirschmann. Relationships Among Locus of Motivation, Sensory Modality, and Grouping Preferences of Learning Style to Basic Skills Test Performance in Reading and Mathematics. (Memphis State University, 1980.) DAI 41A: 2923-2924; January 1981. [8101803] [grade 8]

Wirth, Patricia Ann. Diagnostic Assessment of Intellectual Development of Young Children Through Pictorial Classification Items: A Piagetian Perspective. (Southern Illinois University at Edwardsville, 1981.) DAI 42A: 998-999; September 1981. [8118119] [ages 5-7]

Wright, Everette Wayne. Achievement of Basic Skills by Tenth-Grade Compensatory Mathematics Students with Selected Instructional Measures. (The University of Florida, 1981.) DAI 42A: 2480; December 1981. [8127475]

No significant achievement difference was found between students given or not given compensatory help. (grade 10)

Wright, Jeanne B. The Measured Academic Achievement of Two Groups of First Grade Students Matched Along Five Variables When One Group Has Been Retained. (Temple University, 1979.) DAI 41A: 3418; February 1981. [8101004] [grades 1-3]

Yellott, Robert Taylor. An Evaluation of the Developmental Mathematics Program at McNesse State University. (McNesse State University, 1981.) DAI 42A: 2549-2550; December 1981. [8216987]

Suggestions are given for placement and for structuring the program. (college)

Young, Nancy June. The Effects on Spatial Abilities in Hemispheric Enhancement Through Right-Brain Instructional Techniques. (United States International University, 1981.) DAI 42A: 625; August 1981. [8116379]

Students receiving mathematics instruction designed to promote right-brain mental processing scored significantly better than those having instruction "in the usual manner." (grade 6)

Zettoun, Hassan Hussein. Predicting the Piagetian Cognitive Developmental Levels as Measured by the Burney Logical Reasoning Test Among Teacher Education Students at The Pennsylvania State University. (The Pennsylvania State University, 1980.) DAI 42A: 161-162; July 1981. [8112850] [college (preservice teachers)]

Ziegenbalg, Sherry Bauer. Manipulative Versus Non-Manipulative Approaches to Teaching Renaming in Addition and Subtraction in Second Grade: An Experimental Study. (Rutgers University The State University of New Jersey (New Brunswick), 1981.) DAI 42A: 1524-1525; October 1981. [8120871]

No significant differences were found between groups taught using

the abacus, multi-base blocks, or teacher demonstration with aids. (grade 2)

Zirkel, Ronald Elmer. The Role of Manipulatives in Schematic Approaches to Area Measurement for Middle School Students. (Virginia Polytechnic Institute and State University, 1980.) DAI 41A: 3933; March 1981. [8105347]

Having students handle manipulative aids or having the teacher handle either manipulative or pictorial aids resulted in relatively equivalent achievement. (grades 6, 7)

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Journals Searched

Journals indicated by an asterisk were searched page by page. For the remainder, either one or more issues could not be searched, or articles were located through the use of an index such as *CIJE*. The number in parentheses indicates the number of references listed.

**Alberta Journal of Educational Research* (7)
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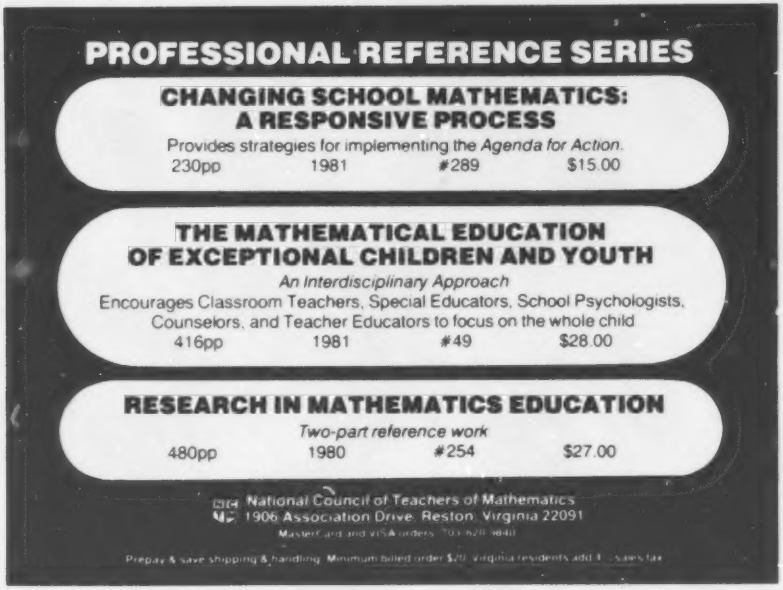
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Kraus	E
Lamoyne and Favreau	E
Lloyd et al.	E

Matthews	E/C
McKillip	E/S
Nibbelink	E
Owston	E
Peck and Jencks (a, b)	E/S
Post	E/S
Robitaille and Sherrill	E/S
Schoen et al.	E
Schunk	E
Wilkening	E/S/C

D

Albina	E
Bailey	E
Beattie	S
Bergan	E
Davis and Carney	E
Dean	E
Duncan	E
Elliott, J.	E
Ford, J.	E
Hetzel	E
Horany	E
Humphrey	S
Hunting	E
Junkin	S
Kopp	E
Kuhs	E
Pieper	S
Richardson, D.	E
Salama	E
Sharpe, P.	E
Slesnick	E
Thaeler	E
Walker, K.	E/S
Ziegenbalg	E

Organizing and Grouping

J

Aitkin et al.	E
Battista	E
Beady et al.	S
Beck et al.	E
DuRapau and Carry	S
Eshel and Klein	E
Gray and Satterly	E
Harrison et al. (a, b)	E
Hirsch	E/S
Horak	E/S
Janicki and Peterson	E
Knight et al.	E
Nash	E
Parr et al.	E
Peterson et al.	E
Ross and Rakow	C
Russell	E
Schoen et al.	E
Schunk	E
Singh	S
Skon et al.	E
Slavin and Karweit	E
Squire et al.	E
Tennyson et al.	E
Vest et al.	E
Wade	E
Weldon et al.	E/S

D

Adams, J.	C
Adams, R.	C
Bass	S
Beasley	S
Bennett, K.	S
Bienstock	C
Bierman	E
Bookman	S
Brewer, S.	E
Burns	C
Buschhoff	E
Campbell	E
Corn	C
Dimas	S
Duren	S
Eldersveld	C
Ford, J.	E
Ford, K.	S
Garrett	S
Giuli	E
Graw	E
Harkins	C
Hastings	E
Hempel	E
Hoffman	E
Israel	E/S
Jackson, L.	S
Klagholz	S
Kuhlman	E
Leslie	S
Lopez	E
Marsh	E/S
Martin, H.	S
Matthews	S
Mazareas	E
McLaughlin, B.	C
McSpadden	E
Montiel	C
Mowrer	E/S
Mundy	C
Owen	S
Palmer	C
Power	E
Reinauer	C
Rosenholtz	E
Sancho	E
Sharpe, A.	E
Smith	E
Soileau	E/S
Stanton	C
Stark	C
Still	S
Walker, B.	E
Ward	S/C
Wesley	E
Wright, E.	S
Zirkel	E/S

Other Individual Factors

J

Algozzine and Stoller	E
Algozzine and Ysseldyke	E
Anick et al.	E/S
Armstrong	S
Badger	E/S
Beck et al.	E
Becker	S
Bergman	E
Brush	E/S
Bryson and Dicken	C
Eisenberg et al.	E/S
Fennema and Carpenter	E/S
Fennema et al.	S
Fisk and Janzen	E
Foshay and Misanchuk	C
Fuller and Goh	E
Harrison et al. (b)	E
Hashway	C
Head	E/S
Heller and Parsons	S
Howe and Shayer	E
Hoz	S
Kansky and Olson	S
Karmos et al.	E
Kleiman et al.	E/S
Lean and Clements	C
Linn and Harnisch	S
Lloyd et al.	E
Luchins	C
Lyson	C
Matthews and Volkin	E
Moffitt	E
Nummedal and Collea	C
Olson and Kansky	S
Omizo et al.	S
Pedro et al.	S
Rees	S
Roberge and Flexer	E/S
Saxe and Shaheen	E
Smead and Chase	E
Smith and Schroeder	E
Sovchik et al.	E
Stott	E
Vukovich	C
Wade	E
Watson	E

D	
Al-Sarraf	E
Bass	S
Beasley	S
Beattie	S
Bennett, B.	E
Bennett, K.	S
Block	E
Brewer, J.	E
Brunson	C
Bryant	E
Buchanan	S
Buerk	C
Caldwell	E/S
Cheshire	S
Clapp	E
Corwin	S
Counihan	S
Czarnecki	C
Daloisio	S
Davis	E
de Bronac-Meade	S/C
Deitch	C
DeWolf	S
Dimas	S
Doherty	E
Doody	S
Dooley	C
Eldersveld	C
Fulbright	S
Furuto	C
Futterman	E/S
Gignac	E
Goldsmith	C
Gomez	E
Goodall	C
Gore	E
Greenberg	E/S
Gullett	S
Guthrie, J.	S
Hall	S
Harkins	C
Harris	S
Helm, F.	C
Jackson, L.	S
Johnson, J.	E
Klagholz	S
Koelle	S
Kopp	E
Korzeniowski	E
Kuhlman	E
Lavizzo	E
Leslie	S
Levy	E
Lowery	E
Matthews	S
McCuller	E/S
Meece	E/S
Miller, J.	E/S
Miller, L. D.	E
Miller, L. H.	C
Mundy	C
Nauheim	S
Palmer	C
Parrish	C
Patterson	S
Peterson	E
Philips	E
Pieper	S
Revicki	E
Reyes	S
Richardson, M.	C
Richardson, S.	E
Ridgeway	S
Rodenstein	C
Rodriguez	E
Rosen	E
Rosenberg	C
Rothblum	C
Rothschild	C
Rule, A.	E
Russell	E
Sampson	E/S
Sharpe, A.	E
Sheel	C
Smith	E
Sowa	C
Spungin	E
Stark	C
Stern	E/S
Tabler	E
Taylor, T.	S
van Wyk	E
Warner	E
Watt	E
Webb	C
Weekley	S
White, J.	E/S
Whitfield	E
Williams, E.	E
Williams, H.	C
Williamson	S
Wingo	S
Wright, E.	S

Problem Solving

J	
Bell et al.	S
Carpenter et al. (d)	E
Clement et al.	C
Cope and Murphy	C
Fischbein et al.	S
Giles and Gilbert	C
Janvier	E/S
Lochhead	E/S/C
McClinton	E
Meyer	E
Silver	S

D	
Abdelsamad	S
Bennett, K.	S
Brenner	E
Brewer, K.	E
Brown	E
Buchanan	S
Butscher	S
Carter	E
Chapman	E
Cheshire	S
Dowshen	S
Duren	S
Elliott, J.	E
Engelhardt	E
Ferguson	C
Galvao	E
Goodwin	S
Holland	C
Johnson, J. L.	S
Konsin	E/S
Korzeniowski	E
Mayes	E
McCuller	E/S
Moskel	C
Murphy, N.	S
Nichols	C
Power	E
Proudfit	E
Richardson, D.	E
Rogers	E/S
Ross	C
Scott	S
Shaning	E
Siegel	E
Sousa	E
Spungin	E
Stewart	E
Thomas, W.	C
Wells	S
Wersan	S

Sequencing and Structure

J	
DeVecchi	C
Evertson and Veldman	S
Floden et al.	E
Hollis	E
Ireton and Shing-Lun	E
Kansky and Olson	S
Karweit and Slavin	E
Lang and Ruane	S
Leinhardt and Seewald	E
McLaughlin	E
Nibbelink and Witzenberg	E
Saxe	E/S
Saxe and Sicilian	E

D		Gore	E	Phillips	C
Al Babtain	E	Guthrie, K.	E	Pifer	S
Arnold	S	Hack	E/S	Richey	C
Bastek	S	Harre	S	Schmid	E
Brewer, J.	E	Hecht	S	Silver	C
Clayton	E	Jacobson	E	Silverberg	S
Edenhardt-Pepe	E	Kasten	E/S	Stanton	C
Elliott, L.	E	Maglio	C	Taylor, E.	E
Garabedian	S	Mayes	E	Wagner	E
Gignac	E	Melillo	E	Watt	E
Goodwin	S	Muzzio	E	Williams, J.	E

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